



actiNAS cube RDX

User's Manual

Revision 1.8



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P/N: PW0020000000324

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Preface

About this manual

This manual provides information regarding the quick installation and hardware features of the *NAS system*. This document also describes how to use the storage management software. Information contained in the manual has been reviewed for accuracy, but not for product warranty because of the various environment/OS/settings. Information and specifications will be changed without further notice.

This manual uses section numbering for every topics being discussed for easy and convenient way of finding information in accordance with the user's needs. The following icons are being used for some details and information to be considered in going through with this manual:



Notes: These are notes that contain useful information and tips that the user must give attention to in going through with the subsystem operation.



Important: These are the important information that the user must remember.



Warning: These are the warnings that the user must follow to avoid unnecessary errors and bodily injury during hardware and software operation of the subsystem.



Caution: These are the cautions that user must be aware to prevent damage to the equipment and its components.

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Trademarks

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Changes

The material in this document is for information only and is subject to change without notice.



NOTE: Some screen shots may differ from actual NAS system model.

Before You Begin

Before going through with this manual, you should read and focus to the following safety guidelines. Notes about the subsystem product packaging and delivery are also included.

Safety Guidelines

To provide reasonable protection against any harm on the part of the user and to obtain maximum performance, user is advised to be aware of the following safety guidelines particularly in handling hardware components:

Upon receiving of the product:

- Place the product in its proper location.
- To avoid unnecessary dropping out, make sure that somebody is around for immediate assistance.
- It should be handled with care to avoid dropping that may cause damage to the product. Always use the correct lifting procedures.

Upon installing of the product:

- Ambient temperature is very important for the installation site. It must not exceed 30°C. Due to seasonal climate changes; regulate the installation site temperature making it not to exceed the allowed ambient temperature.
- Before plugging-in any power cords, cables and connectors, make sure that the power switches are turned off. Disconnect first any power connection if the power supply module is being removed from the enclosure.
- Outlets must be accessible to the equipment.
- All external connections should be made using shielded cables and as much as possible should not be performed by bare hand. Using anti-static hand gloves is recommended.
- In installing components, secure all the mounting screws and locks. Make sure that all screws are fully tightened. Follow correctly all the listed procedures in this manual for reliable performance.

Packaging, Shipment and Delivery

- Before removing the subsystem from the shipping carton, you should visually inspect the physical condition of the shipping carton.
- Unpack the subsystem and verify that the contents of the shipping carton are all there and in good condition.
- Exterior damage to the shipping carton may indicate that the contents of the carton are damaged.
- If any damage is found, do not remove the components; contact the dealer where you purchased the subsystem for further instructions.

Introduction



The NAS System

Storage networks become more and more complex. If you need to easily expand storage capacity while providing uninterrupted high-performance data access across your LAN, you may want to consider a NAS (Network Attached Storage) appliance. When budgets are tight and a quick fix is required, a NAS appliance is a low-cost, efficient solution to dodge that network-to-storage logjam. That's why more and more users select NAS architecture as their storage networking.

The NAS system is a reliable, cost-effective way to add storage to the network. It comes with 5 drive trays accommodating 3.5" SATA II drives while SCA-II single connector architecture enables true hot swap capability. Built-in Intel Celeron 1.6GHz CPU (or above), up to 2GB DDR2-667MHz SDRAM and two Gigabit Ethernet ports offers high performance NAS platform. With Linux-based embedded OS design, it can boot without HDD, FDD or CD-ROM to guarantee reliability and quick boot. The NAS system is managed and configured by Flex/Ruby browser-based software, and some features include pre-configure disk capacity, users setting, volume management, quick installation on popular network platform, and multi-protocol support. It is equipped with software RAID to offer fault tolerant data protection. It offers full featured data protection supporting RAID levels 0, 1, 5, 6, 10, Linear.

System reliability is ensured by an environmental monitoring unit, which tracks the enclosure temperature as well as individual disk temperatures. If any irregularity in the system occurs, the monitoring unit alerts the administrator.

Key Features

- Supports up to five hot-swappable SATA II hard drives
- Equipped with software RAID function and supports RAID levels 0, 1, 5, 6, 10, Linear
- Linux-based embedded OS design
- Provides file access services to multiple users over the LAN, the intranet and / or the internet
- Multi-protocol support (TCP/IP, DHCP, AppleTalk, Mac Zone, SMB, NFS, CIFS, AFP over TCP/IP, HTTP)

Technical Specifications

Hardware Platform

- Intel Celeron 1.6G CPU (or above)
- Cache memory: 1GB ~ 2GB DDR2-667MHz
- Supports 5 SATA II 2TB hard drives
- Two Gigabit Ethernet port
- Environmental monitoring unit
- 270W power supply with PFC

Storage

Equipped with software RAID function to offer fault tolerant data protection

- Supports RAID levels 0, 1, 5, 6, 10, Linear
- Volume Management
- Disk usage statistics
- Hot spare capability

General

- Supports Volume as iSCSI Target
- File Server Independent
- Peer-to-peer operation
- Localized language support
- With Quick Setup function
- Supports trunking / load balance / fail over / LACP(802.3ad)
- Support UPS monitoring

Macintosh Support

- AFP over AppleTalk
- AFP over TCP/IP
- Mac Zone
- iTunes service

Connectivity

- SMB over TCP / IP
- NFS over UDP / IP
- CIFS over TCP / IP
- NAT
- DHCP
- FTP
- Internet Server
- Unit acts as a DHCP server
- Unit act as a master browser
- Share level security
- User ID security for NFS

System Management

- Automatic IP address configuration
- Self-contained unit; no extras needed
- Management through Web browser
- Flash upgradeable unit
- Supports Microsoft ADS/PDC and Unix NIS accounts import
- Fail-free online firmware upgrade
- Unicode support

RAID Levels

Below is the list of RAID Levels available for configuration in the NAS.

RAID Level	No. of Allowed Failed Drives	Description	Min. Required No. of Drives
0	None	Block striping is provided and yields higher performance than with individual drives. There is no redundancy.	1
1	1	Drives are mirrored. All data is 100% duplicated on an equivalent drive. Fully redundant.	2
5	1	Data is striped across several physical drives. Parity protection is used for data redundancy.	3
6	2	Data is striped across several physical drives, just like in RAID 5, and a second set of parity is calculated and written across all the drives. RAID 6 provides for an extremely high data fault tolerance and can sustain multiple simultaneous drive failures.	4
10	2	Striping over two RAID1 RAID sets. This level provides mirroring and redundancy through striping.	4
Linear (JBOD)	None	Linear (JBOD) is similar to RAID 0 in that it concatenates the capacity of all member drives. The data is written linearly starting with the first disk drive. When first disk drive becomes full, the next disk drive is used. Linear can have 1 or more disk drives. There is no data redundancy.	1

Installation

Packaging, Shipment and Delivery

- Before removing the system from the shipping carton, you should visually inspect the physical condition of the shipping carton.
- Unpack the system and verify that the contents of the shipping carton are all there and in good condition.
- Exterior damage to the shipping carton may indicate that the contents of the carton are damaged.
- If any damage is found, do not remove the components; contact the dealer where you purchased the system for further instructions.

Unpacking the NAS System

The package contains the following items:

- System unit, included RDX Drive
- One power cord
- Two Ethernet LAN cables

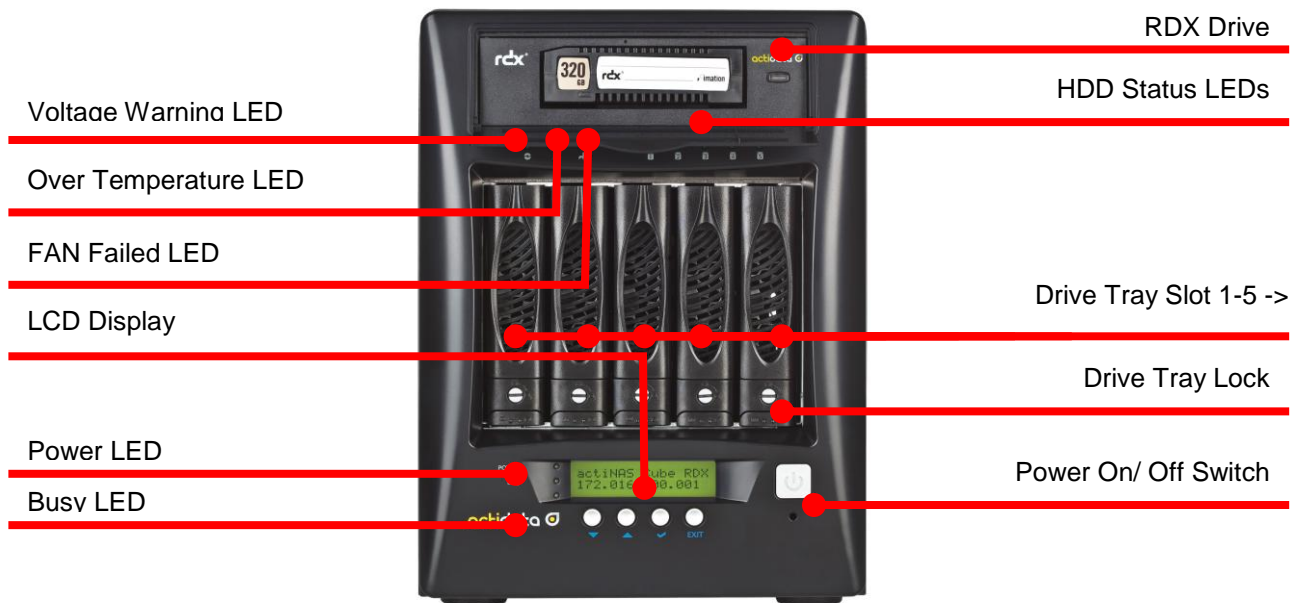


If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

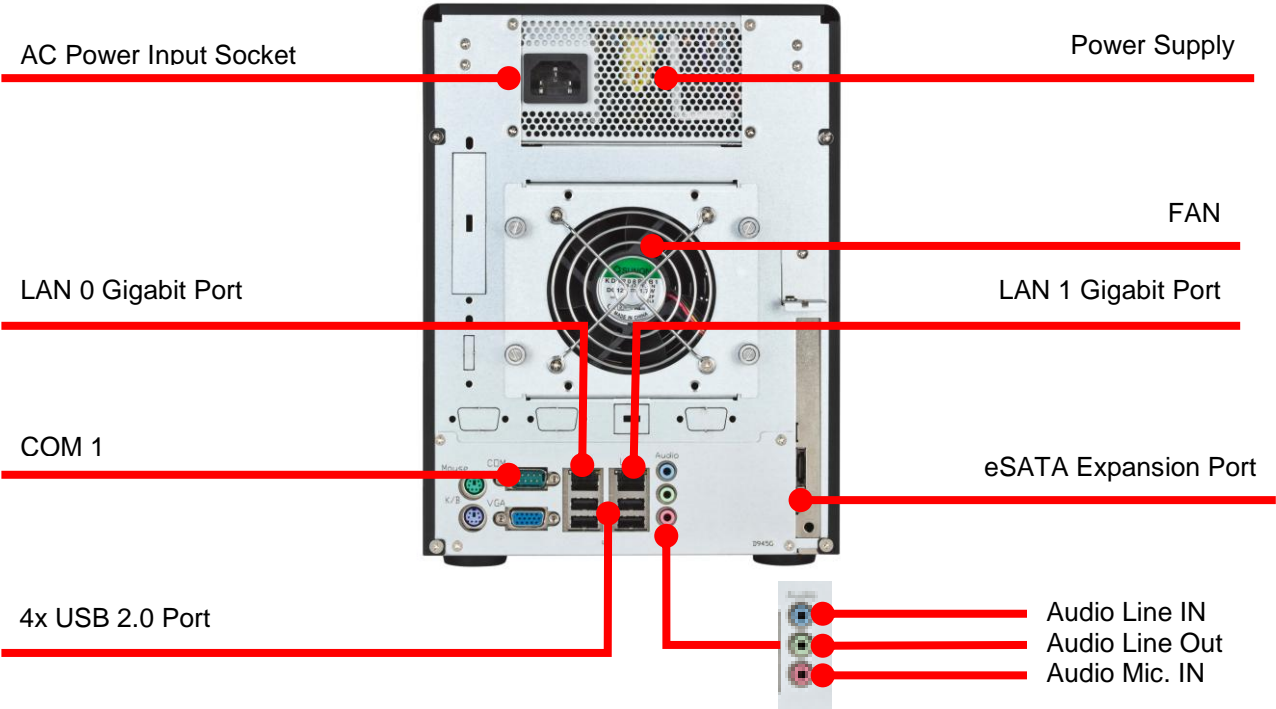
Identifying Parts of the NAS System

The illustrations below identify the various parts of the NAS system.

Front View

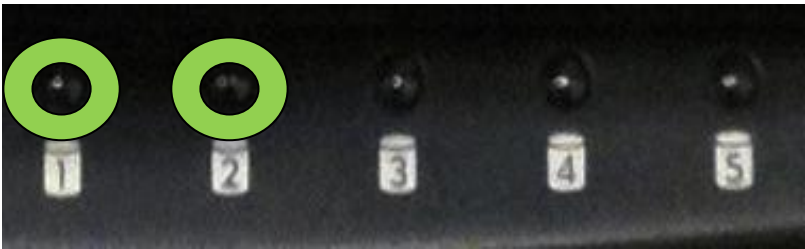


Rear View

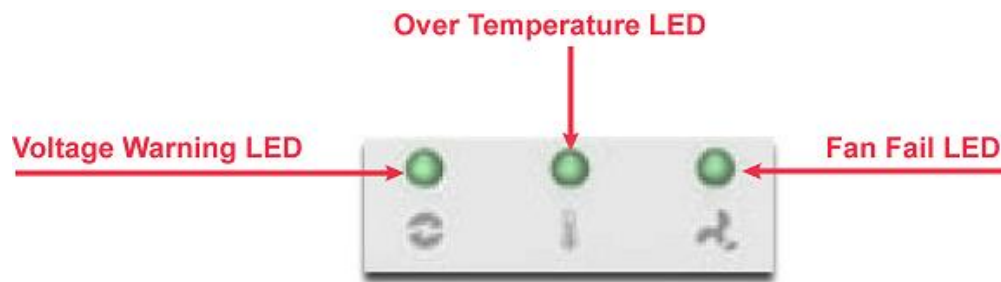





HDD Status LEDs

Green LED indicates power is on and the hard disk drive status is good for this slot. Blinking Orange and Green LED indicates the hard disk drive is in rebuilding state.



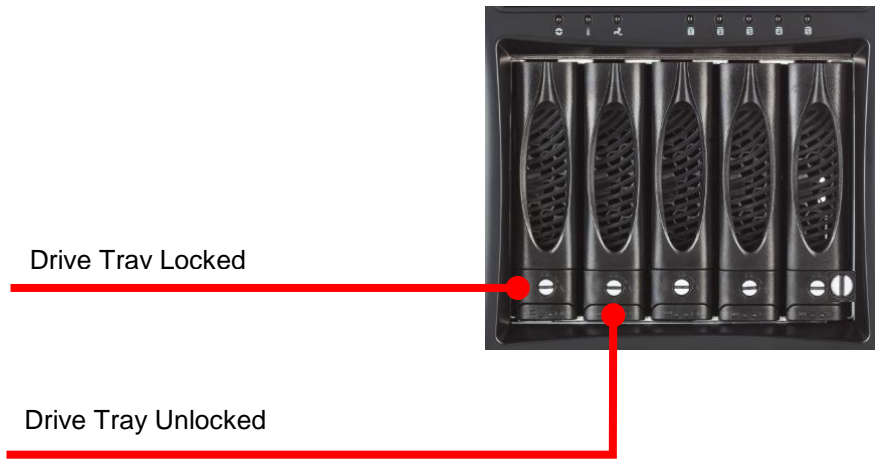
Environmental Status LEDs



Parts	Function
 Voltage Warning LED	An alarm will sound warning of a voltage abnormality and this LED will turn red.
 Fan Fail LED	When fan fails, this LED will turn red and an alarm will sound.
 Over Temperature LED	If temperature irregularities in the system occurs (HDD slot temperature over 55°C), this LED will turn RED and alarm will sound.

2.3.5Lock Indicator

Every Drive Carrier is lockable and is fitted with a lock indicator to indicate whether or not the carrier is locked into the chassis. Each carrier is also fitted with an ergonomic handle for easy carrier removal.

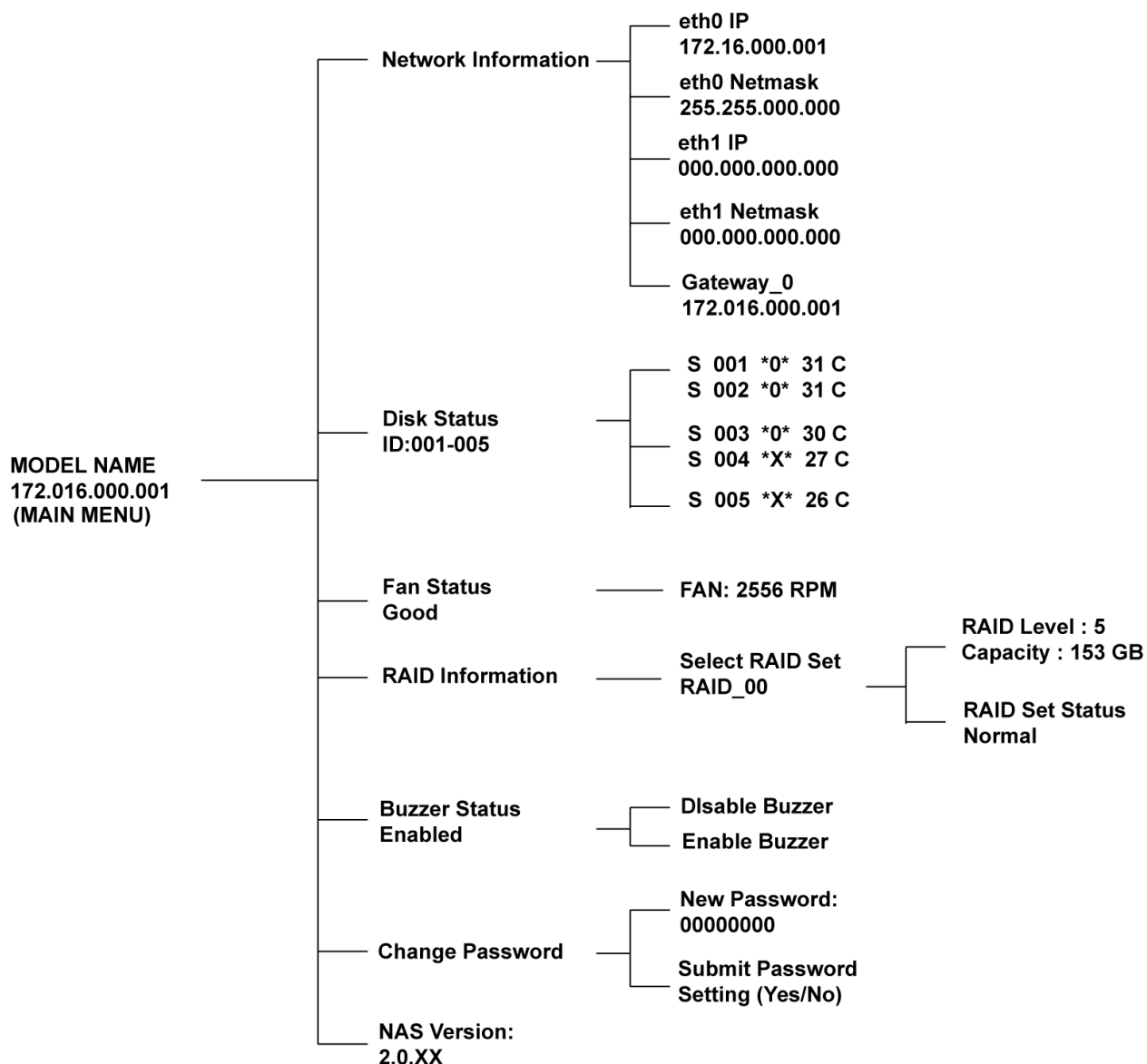


Front Panel



	Parts	Function
▲▼	Power LED	Green LED indicates power is on.
	Busy LED	Orange blinking indicates system is busy or data is being accessed.
	Up and Down Arrow buttons	Use the Up or Down arrow keys to go through the information on the LCD screen. This is also used to move between each menu when you configure the subsystem.
✓	Select button	This is used to enter the option you have selected.
EXIT	Exit button	Press this button to return to the previous menu.

LCD Menu Diagram



Disk Status Information:

S 001 - means slot number 1

O - means disk drive in slot is Online or detected

X - means no disk drive in slot or disk drive not detected

Getting Started with the NAS System

NAS Hardware Setup

1. Attach network cable to LAN0 Ethernet port. Connect the other end of network cable to your network hub or switch. You may also connect the other Ethernet ports if needed.
2. Plug in the power cord into the AC Power Input Socket located at the rear of the subsystem.
3. To turn on the NAS, press the Power On/Off Switch.
4. The Power LED on the front panel will turn green.

Installing Hard Drives

This section describes the location of the hard drives in the NAS system and gives instructions on installing a hard drive. The system supports hot-swapping allowing you to install or replace a hard drive while the system is running.

- a) Make sure the lock indicator is in unlocked position. To pull out a disk tray, press the Lock Indicator Button. Pull the handle outwards to remove the disk tray from the enclosure.



- b) Place the hard drive in the disk tray.



Make sure the holes of the disk tray align with the holes of the hard drive. Install the mounting screws on the bottom part to secure the drive in the disk tray.



- c) Slide the tray into a slot and push the Lock Indicator Button.

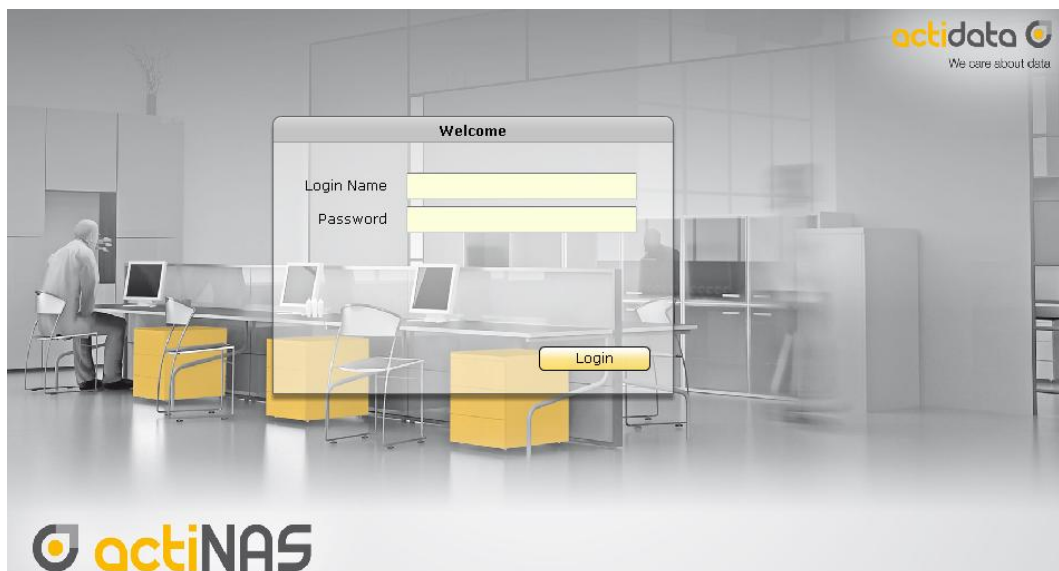


- d) Press the handle until you hear the latch click into place. The HDD status LED will turn green if subsystem is on.



Connecting to NAS Management GUI

1. Configure the network setting of your host system (computer that will be used to manage the NAS) , i.e. add network IP address such as 172.16.0.5 subnet 255.255.0.0, to enable connection to NAS default IP 172.16.0.1, (if there is no DHCP server in your network). Refer to Table below.
2. Open web browser and type in the address bar *http://172.16.0.1:3000*, or use the dynamic IP assigned to the NAS, if a DHCP server is available.
3. The actiNAS Login Page will be displayed.



4. Enter the Login Name account and Password. See default settings in the table below.

NAS Default Settings

Entity	Default Value
LAN0 (eth0) IP address	172.16.0.1
TCP port	3000
Net Mask	255.255.0.0
Hostname	NAS
Login Name	admin
Password	00000000

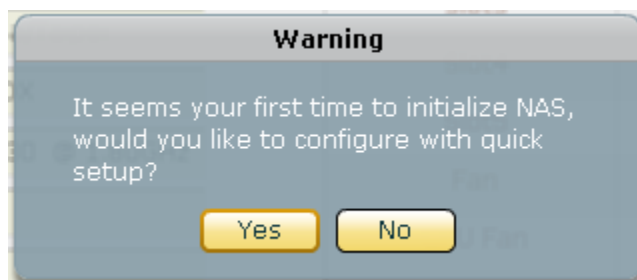


NOTE:When the system initially has no NAS configuration (Unit is new and drives have just been used and inserted in the disk slots), after login to GUI, the Quick Setup option will be displayed. Refer to the Quick Setup information in the next section.

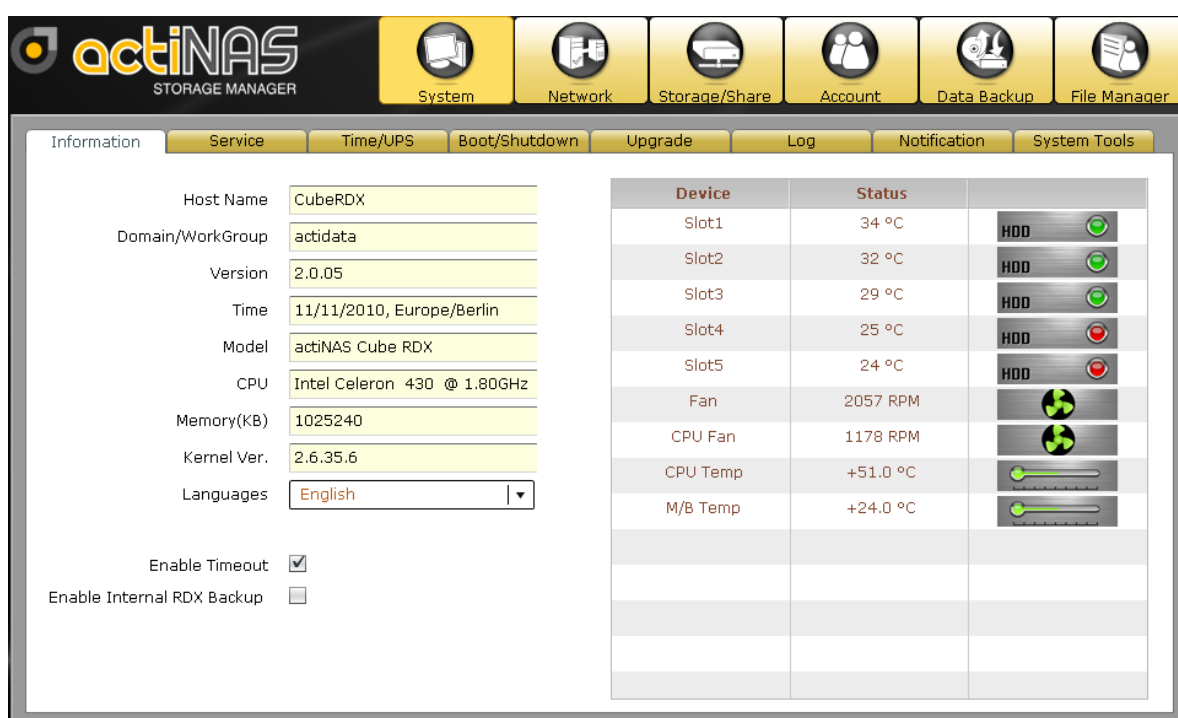


NOTE: The admin password for NAS management GUI login can be changed in Account → Account tab.

5. A warning message will be displayed. Select **Yes** to configure the NAS for the first time using Quick Setup (see next Section how to configure with Quick Setup).



6. If you select **No** in the message shown in item #5 (no existing NAS configuration, or NAS system has been configured already), after login, the actiNAS Manager GUI will be displayed.



NOTE: *Enable Timeout* is enabled by default. When there is no activity in the actiNAS Manager GUI, admin will be automatically logged out after 15 minutes. To disable timeout, remove check mark in *Enable Timeout*.



NOTE: The Language options supports: English, Traditional Chinese, Simplified Chinese, Japanese, Korean, and Spanish.

Quick Setup



NOTE: The Quick Setup provides a quick and easy way to setup the basic NAS configuration. This function will create the NASVG, which is a Volume Group that holds the NAS configurations and must be created or initialized the first time the NAS is used. The Quick Setup will make use of all available disk drives in the NAS.

The Quick Setup options are listed below:

1. **RAID**
This is used for selecting the RAID Level.
2. **Storage/Share**
This shows the default Home share capacity which can be changed. It also shows default share named *share* which can be renamed and whose size can be changed.
3. **Network Adapter**
This is for configuring the primary Ethernet interface LAN0 (eth0) network settings. After changing the settings, admin need to login using the new IP address.
4. **Service**
This is for enabling the basic Services provided by actiNAS. Windows (Samba) service is enabled by default.

The Quick Setup Steps:

1. Configure the software RAID by selecting the RAID Level.

The RAID Level options are:

- a) Max. Capacity (RAID0)
- b) Clone Data (RAID1)
- c) Security (RAID5)
- d) Max. Security (RAID6)

The screenshot shows a window titled "RAID". Inside, there is a text box stating "The software RAID device will join the Storage automatically." Below this, it displays "Disk Number : 3" and "Available Size(GB): 1862". There is a checked checkbox labeled "Without initializing." and a dropdown menu for "RAID Level" which is currently set to "Security(RAID5)".



NOTE: To initialize the RAID, remove the check mark in the *Without initializing* option. Initializing the RAID will ensure the previous RAID data in the disks are cleared.

2. Configure the Storage/Share.
 - a) Change the *home* size default capacity if needed.
 - b) Rename the default share if necessary.



NOTE: The share folder name does not allow space in-between characters.

- c) Change the size of the default share if needed.

Storage/Share	
Home Size (GB)	<input type="text" value="10"/>
Share Name	<input type="text" value="share"/>
Share Size (GB)	<input type="text" value="10"/>

3. Configure the Network Adaptor settings. Select *DHCP* option, or configure static IP.
 - a) Enter the new NAS Host Name in the Host Name box.

Network Adaptor		
<input type="checkbox"/> DHCP	<div>The section is for setting up the primary ethernet.</div> <div>After quicksetup, you will need to use this IP to connect to NAS.</div>	
Host Name		<input type="text" value="NAS"/>
IP		<input type="text" value="192.168.150.50"/>
Gateway		<input type="text" value="192.168.150.1"/>
Subnet Mask		<input type="text" value="255.255.255.0"/>

- b) Enter the new IP address.
 - c) Edit the Subnet Mask and Gateway.

The configuration options in Network Adaptor:

- **Host Name**
The Host Name is the NetBIOS name of NAS system. This name should be unique.
- **IP**
This is the IP address of primary Ethernet port LAN0 (eth0) used for NAS management or share folder access. If not set or no DHCP server, it will use the default IP 172.16.0.1.

- **Subnet Mask**
The Subnet Mask used. If not set, it will use the default Subnet Mask 255.255.0.0.
- **Gateway**
The Gateway used. If not set, it will use the default Gateway 172.16.0.1.

4. Configure the Service options.

- a) Enable the actiNASService options as needed.

Service

☒ Windows(Samba)

☐ Unix/Linux(NFS)

☐ Mac(AFP)

5. Click the *Execute* button.

Welcome to Quicksetup -> Configuration (Step 1/2)

This quicksetup will guide you to setup the system easily. The process includes the storage, service and network configuration . Once you complete the setup, the system will be ready for use after a couple minutes.

RAID

The software RAID device will join the Storage automatically.

Disk Number : 3 Available Size(GB): 1862

☒ Without initializing.

RAID Level Security(RAID5)

Storage/Share

Home Size (GB) 10

Share Name share

Share Size (GB) 10

Network Adaptor

☐ DHCP

Host Name NAS

IP 192.168.150.50

Gateway 192.168.150.1

Subnet Mask 255.255.255.0

The section is for setting up the primary ethernet.

After quicksetup, you will need to use this IP to connect to NAS.

Service

☒ Windows(Samba)

☐ Unix/Linux(NFS)

☐ Mac(AFP)

Execute Cancel

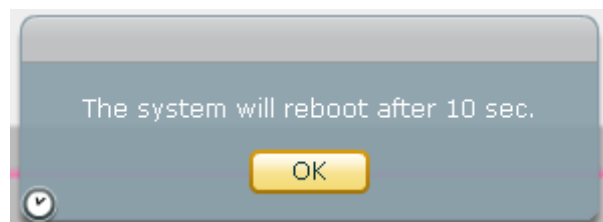
The configurations will be set.



6. A warning message will be displayed. Select **Yes** to reboot the NAS and free some memory used by the system.



7. A message will be displayed. Click **OK**.



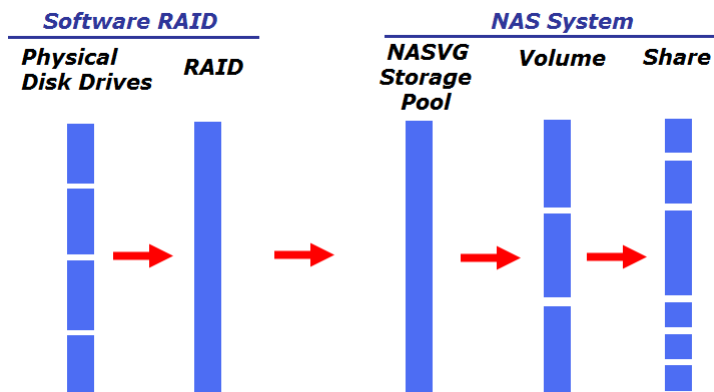
8. The NAS will restart. Wait for about 3 to 4 minutes then login again. If IP address was changed in Network Adapter settings, re-login to actiNAS administration page using the new IP address.

Overview of the NAS Setup Phases

The Setup Phases include configuring actiNAS components with actiNAS Manager. The basic steps are:

- Create RAID Disk from Hard Disk Drives
- Join RAID Disk to Volume Group's Storage Pool
- Setup the Network Environment
- Enable Services for Windows clients, Linux/UNIX clients, and MAC clients
- Create and Setup Logical Volume and Share Folder.
- Create Accounts or Groups or Join ADS/NIS Domain and assign Share Folder Permission

Relationship between RAID disks, Storage Pool, Volumes, and Shares



RAID disks

RAID disks are basically logical disks created using the *Create New RAID* button by selecting the physical disk drives to be included as RAID member. When physical disk drives are included in RAID, the status will show as *RAID_MEMBER*. When a physical disk drive is free (neither a RAID member nor a hot-spare), its status will show *UN_USED*.

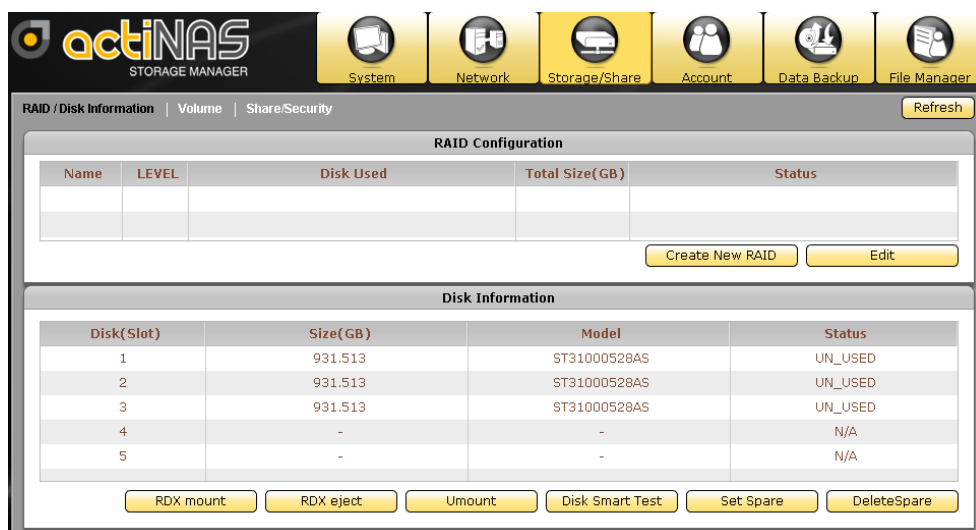
When a RAID disk is created, the RAID level is assigned. Select your preferred RAID level. Please note that the RAID level options available for selection depends on the number of physical disk drives in the NAS.

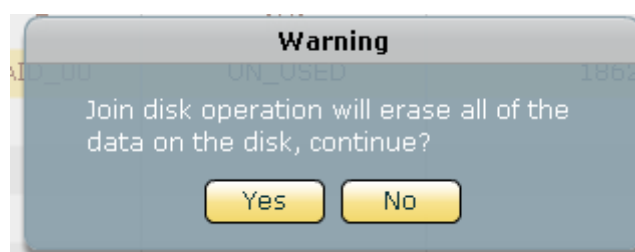
Please refer to page 11 for more information about the different RAID levels available in the NAS, and to page 33 for creating RAID.

Storage Pool

The Storage Pool is a collection of storage devices, such as RAID disk, which have been joined to NASVG (NAS Volume Group). At least one RAID disk must be joined to NASVG Storage Pool.

After one RAID disk is joined to Storage Pool, the NASVG is initialized and the basic NAS configuration is setup. All other NAS configurations can be done, such as creating Volumes, Shares, and Accounts, and configuring different NAS services.





Join Disk to Storage Pool

Select	Disk(Slot)	Status	Size(GB)
<input type="checkbox"/>	1	RAID_MEMBER	931.513
<input type="checkbox"/>	2	RAID_MEMBER	931.513
<input type="checkbox"/>	3	RAID_MEMBER	931.513
<input type="checkbox"/>	4	N/A	-
<input type="checkbox"/>	5	N/A	-
<input checked="" type="checkbox"/>	RAID_00	UN_USED	1862.868

Home Size(GB)

Home is the preinstall logic volume, each user has the exclusive folder to construct at this logic volume, only provides individual user to use

Please refer to page 31 for more information.

Volumes

Volumes are logical disks created from the NASVG (NAS Volume group). The NASVG total capacity will be almost equal to the capacity of a RAID disk joined to the NASVG Storage Pool. When Volume is created, the Volume capacity will be taken from the available capacity of the NASVG. After a Volume is created, Share folders can also be created. The iSCSI volume can also be configured for a particular Volume. Note that the capacity of a Volume can be extended.

Please refer to page 44 for more information.

Create New Volume

Name

vol1

Size(MB)

5000

Free Size(MB)

278528

OK

Cancel

RAID / Disk Information | Volume | Share/Security

Refresh

Storage Information

Name

NASVG

Size(GB)

1862

Disk

RAID_00

Free Size: 1846GB 99.14%

Used Size: 16GB 0.859%

Join Disk

Create Volume

Volume List

Detail View | Grid View

Name

home

Size(GB)

10.00

Used Size(GB)

0.03223

Used Size: 0.32%

Delete

Extend

Shares

Shares are the shared folders that are accessed by users in the network. Shares that are created within the same Volume will share or use the total capacity of the Volume.

It is also in the Share where account or group permission is assigned, to allow read-only or read-write access, and where different Protocol Settings for the selected Share can be enabled and configured, or disabled.

Please refer to page 56for more information.

RAID / Disk Information | Volume | Share/Security

Refresh

Share Info

Basic

Privilege

Share Name

share1

Volume

vol1

Owner

admin

Public

Protocol Setting

Windows(Samba)

☒ Enable Samba Sharing

☐ Case Sensitive

☒ Files Begin with Dots

Max. connection

0

Unix/Linux(NFS)

Mac(AFP)

Rsync

Apply Privilege

Delete

Save

Cancel

RAID / Disk Information | Volume | Share/Security

Refresh

Share Folder	Volume	Windows(Samba)	Unix/Linux(NFS)	Mac(AFP)	Rsync
RDX_Recorder	Attached-Storage	Yes	No	No	No
share1	vol1	Yes	No	No	No

Create Share Folder

Edit Share Folder

actiNAS Manager

There are six management functions used to configure or manage the NAS.

- Network
- System
- Storage/Share
- Account
- Data Backup
- File Manager

Storage/Share

RAID / Disk Information

Click the Storage/Share icon then select RAID tab. The RAID Configuration and Disk Information window will be

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	1862.868	active

Disk(Slot)	Size(GB)	Model	Status
1	931.513	ST31000528AS	RAID_MEMBER
2	931.513	ST31000528AS	RAID_MEMBER
3	931.513	ST31000528AS	RAID_MEMBER
4	-	-	N/A
5	-	-	N/A
RDX	298.087	RDX	IS_MOUNTED
RAID_00	1862.868		IN_USED

displayed.



NOTE: The Storage/Share → RAID function is normally used when creating a customized RAID configuration. This can be used when the Quick Setup has not been done yet, or Quick Setup has already been done but the RAID will be expanded using new disk drives.

RAID Configuration Screen

Name	The RAID disk name. This defaults to <i>RAID_00</i> if this is the first RAID disk created
LEVEL	The RAID level used by the RAID disk
Disk Used	The hard disk drives (slots) joined to the RAID disk
Total Size (GB)	The capacity size of the RAID disk
Status	The current status of the RAID disk. Status can be active, degraded, rebuilding, or failed

RAID Configuration Options

Create New RAID	Use to create a RAID disk using the hard disk drives
Edit RAID	Used to edit an existing RAID disk, such as extend the RAID (add another hard disk drive).

Disk Information Screen

Slot	The hard disk drive slot number
Disk	The hard disk drive device name. The first disk drive is named <i>/dev/sda</i>
Size (GB)	The capacity size of the hard disk drive
Model	The hard disk drive model name
Status	The current status of the hard disk drive. Status can be <i>RAID_MEMBER</i> , <i>UN_USED</i> , or <i>SPARE</i>

Disk Information Options

Disk Smart Test	Use to perform SMART test on a selected disk drive There are two types: <ul style="list-style-type: none">• Long Test - does extended/in-depth test on the disk drive which can run in about an hour (more or less 60 minutes).• Short Test – does short test on the disk which can run in more or less 2 minutes.
Umount	Use to un-mount a disk
Set Spare	Use to set a selected hard disk drive as a Spare Disk
Delete Spare	Use to remove the Spare Disk setting on a hard disk drive



NOTE: To display the SMART Information of a disk drive, double-click on the disk drive in the Disk Information list.

Create New RAID and Join Disk to Storage Pool

Steps to Create a New RAID and Join Disk to Storage Pool:

1. Click *Create New RAID*.
2. Set the RAID Level and Stripe size, and select the hard disk drives to be included in the RAID disk. To initialize the RAID, remove the check mark in *Without initializing* option.

RAID Configuration

☐ Without initializing.

RAID Level

RAID5

Stripe

64

Select	Disk(Slot)	Size(GB)	Model	Status
<input checked="" type="checkbox"/>	1	465.762	WD5001ABYS-01YNA	UN_USED
<input checked="" type="checkbox"/>	2	465.762	WD5001ABYS-01YNA	UN_USED
<input checked="" type="checkbox"/>	3	465.762	WD5001ABYS-01YNA	UN_USED
<input type="checkbox"/>	4	-	-	N/A
<input type="checkbox"/>	5	-	-	N/A

Create

Cancel

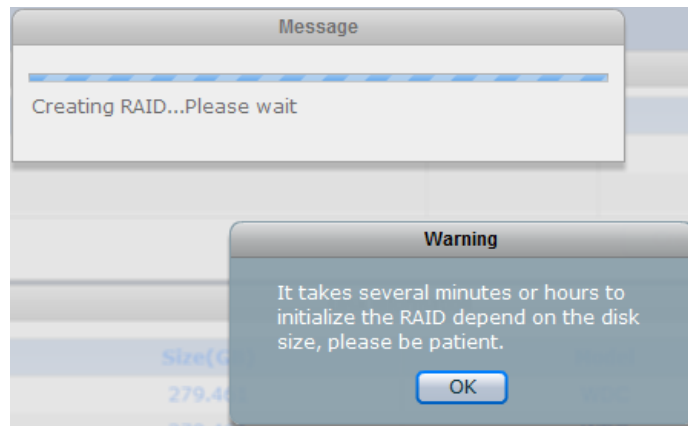
RAID Configuration Options

RAID Level	Select the RAID Level you want for the RAID configuration. Available options, depending on number of disk drives, are: JBOD, 0, 1, 5, 6, and 10
Stripe Size	Set the size of the stripe (block size or chunk size) written to each disk drive. Default is 64KB. Other options are: 128KB, 256KB, 512KB and 1024KB
Without initializing	Use this initialize or not initialize the RAID. Default is not to initialize the RAID (with check mark). For first time use, it is recommended to initialize the RAID to ensure the previous RAID data in the disk drives are cleared



NOTE: A large stripe size produces better read performance if the NAS does mostly sequential reads. If the NAS will do mostly random reads, small stripe size is recommended.

3. A message will be displayed. A warning message is also displayed. Click *OK* to close the warning message.



4. The RAID disk will be initialized. Verify in the Status information the current initialization process.

RAID / Disk Information | Volume | Share/Security Refresh

RAID Configuration

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	1862.868	active

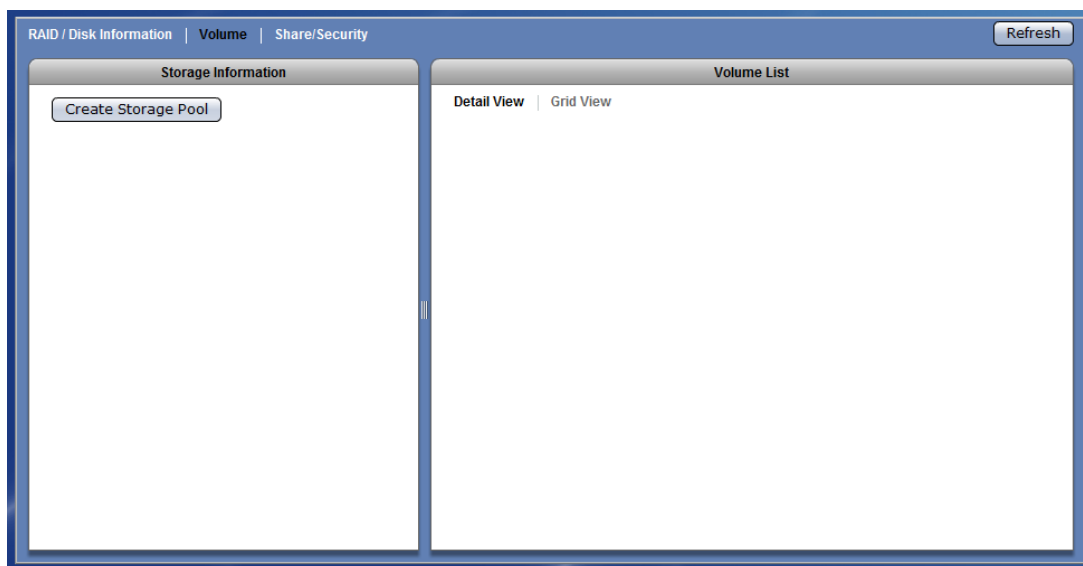
Create New RAID Edit

Disk Information

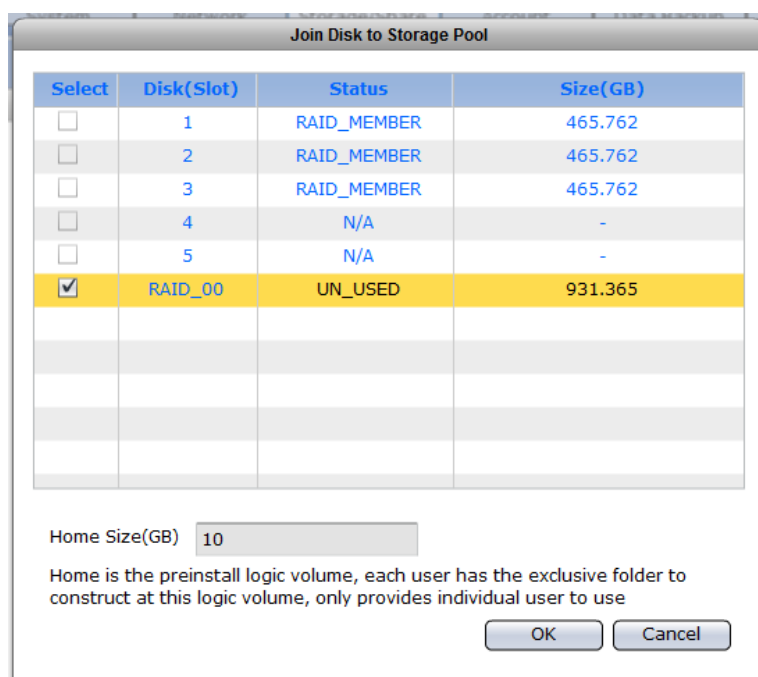
Disk(Slot)	Size(GB)	Model	Status
1	931.513	ST31000528AS	RAID_MEMBER
2	931.513	ST31000528AS	RAID_MEMBER
3	931.513	ST31000528AS	RAID_MEMBER
4	-	-	N/A
5	-	-	N/A
RDX	298.087	RDX	IS_MOUNTED
RAID_00	1862.868		IN_USED

RDX mount RDX eject Umount Disk Smart Test Set Spare DeleteSpare

5. While the RAID disk is initializing, the status will show active and the Disk Information will show *UN_USED*. The RAID disk can be joined to NASVG in Volume tab using *Create Storage Pool* button. Click *Create Storage Pool*.



6. Select the disk (must be RAID disk, such as RAID_00) that will be added to storage pool. Click **OK** when done.



The dialog box titled "Join Disk to Storage Pool" contains a table with four columns: Select, Disk(Slot), Status, and Size(GB). The table lists five disks. Disk 1, 2, and 3 are RAID_MEMBER (465.762 GB). Disk 4 and 5 are N/A (- GB). Disk RAID_00 is UN_USED (931.365 GB) and is selected with a checked checkbox. Below the table, there is a "Home Size(GB)" field set to 10. A note states: "Home is the preinstall logic volume, each user has the exclusive folder to construct at this logic volume, only provides individual user to use". At the bottom right are "OK" and "Cancel" buttons.

Select	Disk(Slot)	Status	Size(GB)
<input type="checkbox"/>	1	RAID_MEMBER	465.762
<input type="checkbox"/>	2	RAID_MEMBER	465.762
<input type="checkbox"/>	3	RAID_MEMBER	465.762
<input type="checkbox"/>	4	N/A	-
<input type="checkbox"/>	5	N/A	-
<input checked="" type="checkbox"/>	RAID_00	UN_USED	931.365

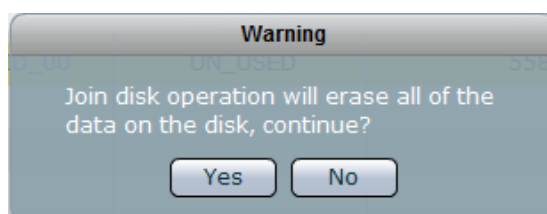
Home Size(GB)

Home is the preinstall logic volume, each user has the exclusive folder to construct at this logic volume, only provides individual user to use



NOTE: NASVG, which is a Volume Group that holds the NAS configurations, will be created when at least one disk (RAID disk) is joined to Storage Pool. At the same time, the default Home volume is also created. The Home volume holds the individual share folders of all user accounts. The default Home volume size is 10GB. If necessary, change the Home size to a larger size.

7. A warning message will be displayed. Select **Yes** to proceed.

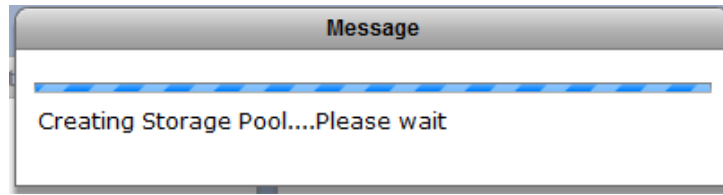


The warning dialog box titled "Warning" contains the text: "Join disk operation will erase all of the data on the disk, continue?". At the bottom are "Yes" and "No" buttons.

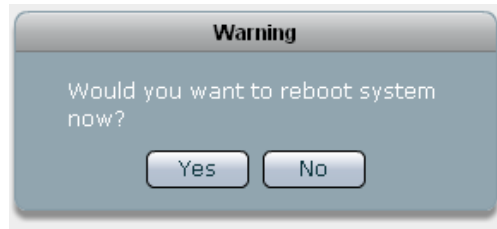
Warning

Join disk operation will erase all of the data on the disk, continue?

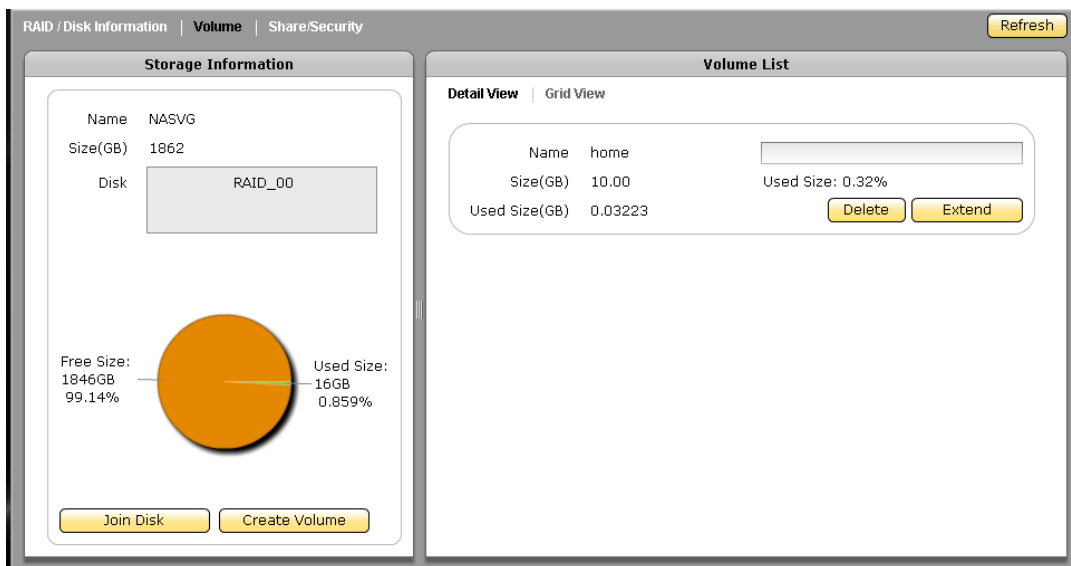
8. A message will be displayed.



9. When warning message is displayed, select Yes to free some memory used by the system. The NAS system will reboot.



10. Re-login to the system then select Storage/Share. The NASVG and the default Home volume are created.



NOTE: After NASVG is initialized, the Storage Information screen will show a pie chart with amount of Free Size and Used Size. Volumes can be created from the NASVG.

11. After the RAID disk is joined to NASVG, the RAID status in Disk Information will show *IN_USED*.

RAID / Disk Information | Volume | Share/Security

Refresh

RAID Configuration

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	1862.868	active

Create New RAID | Edit

Disk Information

Disk(Slot)	Size(GB)	Model	Status
1	931.513	ST31000528AS	RAID_MEMBER
2	931.513	ST31000528AS	RAID_MEMBER
3	931.513	ST31000528AS	RAID_MEMBER
4	-	-	N/A
5	-	-	N/A
RDX	298.087	RDX	IS_MOUNTED
RAID_00	1862.868		IN_USED

RDX mount | RDX eject | Umount | Disk Smart Test | Set Spare | DeleteSpare



NOTE: Once a RAID disk has been joined to the NASVG Storage Pool, the RAID disks can no longer be deleted using *RAID/Disk Information→Edit→Delete*. Once joined, the RAID disk status will be shown as *IN_USED* which means the NAS system is already using the RAID disk.

The way to delete existing RAID disks which are already joined to Storage Pool is to reset NAS to factory default in *System→Boot/Shutdown→Reboot to Default*. **WARNING!** Using this option **will delete all existing RAID configuration and data**, and the NAS will be reset to factory default settings.

Delete RAID



NOTE: Once a RAID disk has been joined to the NASVG Storage Pool, the RAID disks can no longer be deleted using RAID/Disk Information→Edit→Delete. Once joined, the RAID disk status will be shown as *IN_USED* which means the NAS system is already using the RAID disk.

The way to delete existing RAID disks which are already joined to Storage Pool is to reset NAS to factory default in *System→Boot/Shutdown→Reboot to Default*. WARNING! Using this option will delete all existing RAID configuration and data, and the NAS will be reset to factory default settings.

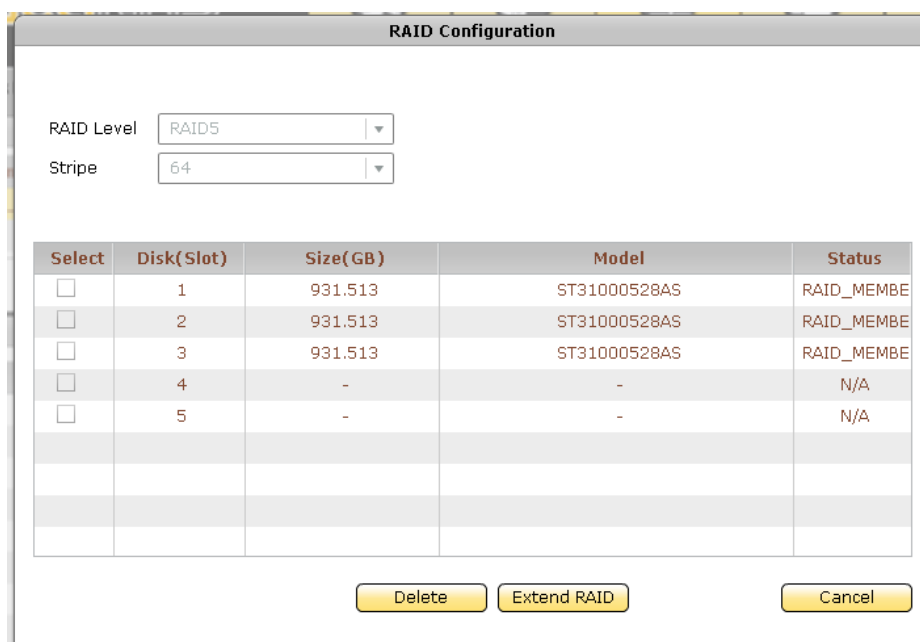
Steps to delete an existing RAID:

1. Select the RAID disk to be deleted. The RAID disk will be highlighted.
 - a. **Once a RAID disk has been joined to the NASVG Storage Pool, the RAID disks can no longer be deleted**

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_01	1	sdd(Slot4),sde(Slot5)	465.683	active
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	931.365	initializing,19.7%,finish=92.0min,speed=70965K/

Create New RAIDEdit

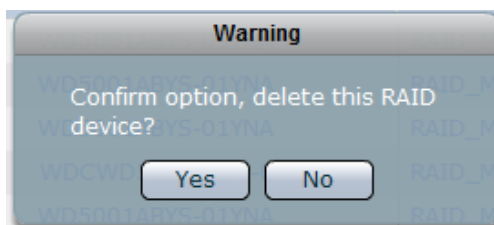
2. Click *Edit*. The RAID Configuration window will be displayed.



The RAID Configuration window displays settings for a RAID array. At the top, there are two dropdown menus: 'RAID Level' set to 'RAID5' and 'Stripe' set to '64'. Below these is a table with five columns: 'Select', 'Disk(Slot)', 'Size(GB)', 'Model', and 'Status'. The table lists five disks. Disks 1, 2, and 3 are selected (indicated by checkboxes) and have a status of 'RAID_MEMBE'. Disks 4 and 5 are not selected and have a status of 'N/A'. At the bottom of the window are three buttons: 'Delete', 'Extend RAID', and 'Cancel'.

Select	Disk(Slot)	Size(GB)	Model	Status
<input type="checkbox"/>	1	931.513	ST31000528AS	RAID_MEMBE
<input type="checkbox"/>	2	931.513	ST31000528AS	RAID_MEMBE
<input type="checkbox"/>	3	931.513	ST31000528AS	RAID_MEMBE
<input type="checkbox"/>	4	-	-	N/A
<input type="checkbox"/>	5	-	-	N/A

3. Click *Delete*. A warning message will be displayed.



4. Select Yes to confirm deleting selected RAID disk.
5. The status of the member disks of the deleted RAID will be shown as *UN_USED*.

Extend RAID



NOTE: A RAID cannot be extended if the RAID is busy, such as when the RAID is in Initializing or Rebuilding state. Wait until the RAID status becomes normal then do the RAID extension.

Steps to add drive(s) or extend an existing RAID:

1. Select the RAID disk to be extended. The RAID disk will be highlighted. Click *Edit*.

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	931.365	active

Create New RAIDEdit

2. The RAID Configuration window will be displayed. Select the disk(s) that will be used for extending the RAID. Click *Extend RAID*.

RAID Configuration

RAID Level: RAID5
Stripe: 64

Select	Disk(Slot)	Size(GB)	Model	Status
<input type="checkbox"/>	1	465.762	WD5001ABYS-01YNA	RAID_MEMBER
<input type="checkbox"/>	2	465.762	WD5001ABYS-01YNA	RAID_MEMBER
<input type="checkbox"/>	3	465.762	WD5001ABYS-01YNA	RAID_MEMBER
<input checked="" type="checkbox"/>	4	465.762	WDCWD5001ABYS-0	UN_USED
<input type="checkbox"/>	5	465.762	WD5001ABYS-01YNA	UN_USED

Delete Extend RAID Cancel

3. The RAID will be extended. The disk that was added to the RAID will now have *RAID_MEMBER* status.

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1),sdd(Slot4)	931.365	active,0.0%,finish=577.2min,speed=14084K/sec

Create New RAID Edit

Disk Information

Disk(Slot)	Size(GB)	Model	Status
1	465.762	WD5001ABYS-01YNA	RAID_MEMBER
2	465.762	WD5001ABYS-01YNA	RAID_MEMBER
3	465.762	WD5001ABYS-01YNA	RAID_MEMBER
4	465.762	WDCWD5001ABYS-0	RAID_MEMBER
5	465.762	WD5001ABYS-01YNA	UN_USED
RAID_00	931.365		IN_USED

Unmount Disk Smart Test Set Spare DeleteSpare

Set a Spare Disk

Steps to Set a Spare Disk:

1. Select the hard disk drive to be made a spare disk and click *Set Spare*.

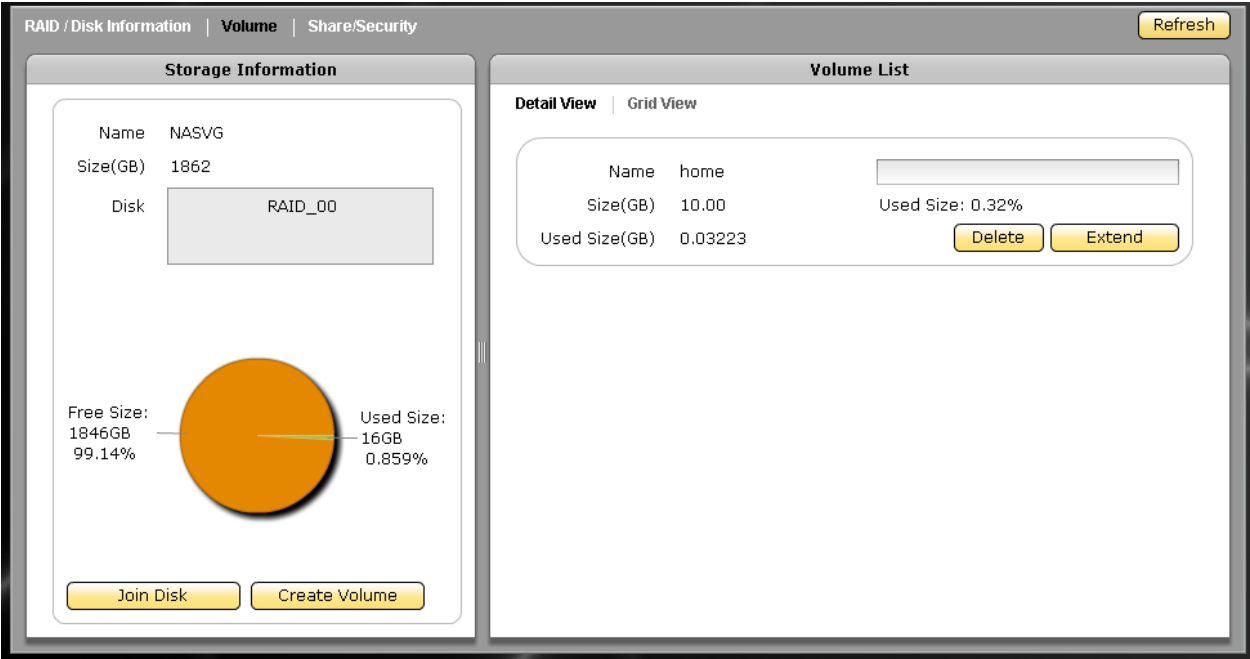
Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1)	558.764	active,17.3%,finish=96.1min,speed=41990K/sec
Create New RAID Edit				
Disk Information				
Disk(Slot)	Size(GB)	Model	Status	
1	279.461	WDC	RAID_MEMBER	
2	279.461	WDC	RAID_MEMBER	
3	279.461	WDC	RAID_MEMBER	
4	279.461	WDC	UN_USED	
5	279.461	WDC	UN_USED	
RAID_00	558.764		IN_USED	
Disk Smart Test Umount Set Spare DeleteSpare				

2. The selected hard disk drive will become a Spare Disk. The Status in Disk Information will show *SPARE*.

Name	LEVEL	Disk Used	Total Size(GB)	Status
RAID_00	5	sdb(Slot2),sdc(Slot3),sda(Slot1),sdd(Slot4)	558.764	active,27.3%,finish=86.4min,speed=41017K/sec
Create New RAID Edit				
Disk Information				
Disk(Slot)	Size(GB)	Model	Status	
1	279.461	WDC	RAID_MEMBER	
2	279.461	WDC	RAID_MEMBER	
3	279.461	WDC	RAID_MEMBER	
4	279.461	WDC	SPARE	
5	279.461	WDC	UN_USED	
RAID_00	558.764		IN_USED	
Disk Smart Test Umount Set Spare DeleteSpare				

Volume

Click the Volume tab. The Volume Configuration screen will be displayed.



Storage Information Screen

Name	The NAS Volume Group default name <i>NASVG</i>
Size (GB)	The total capacity of the NASVG
Disk	The list of RAID disk(s) joined to the NASVG

Storage Information Options

Join Disk	Used to join a RAID disk to the NASVG
Create Volume	Used to create a new Volume. A Volume is storage space which is shared by several Share Folders (several Share Folders can be created under a single Volume)

Volume List Screen: There are two types of view provided to display the Volume information: Detail View and Grid View.

Detail View: has Delete, Extend, and iSCSI buttons

Name	The Volume name
Size (GB)	The total Volume capacity in GB
Used (GB)	The Volume used capacity in GB
Used Size	The Volume used capacity as a percentage of the total Volume capacity

Grid View: displays Volume List in table format

Name	The Volume name
Size (GB)	The total Volume capacity in GB
Used Size (GB)	The Volume used capacity in GB

Volume List Options

Delete	Used to erase the Volume
Extend	Used to extend the total Volume capacity
iSCSI	Used to setup the Volume as iSCSI target

Join a Disk to Storage Pool

Steps to Join a Disk to Storage Pool:

1. Click *Join Disk*.
2. A dialog box will be displayed. Select a RAID logical disk (an unused/newly created RAID disk) to be joined to the Storage Pool of NASVG. Click *OK* when done.



NOTE: If a new (UN_USED) RAID logical disk has not been created yet, create first the RAID disk using the available free physical disk drives.

Join Disk to Storage Pool

Select	Disk(Slot)	Status	Size
<input type="checkbox"/>	1	RAID_MEMBER	279.461
<input type="checkbox"/>	2	RAID_MEMBER	279.461
<input type="checkbox"/>	3	RAID_MEMBER	279.461
<input type="checkbox"/>	4	SPARE	279.461
<input checked="" type="checkbox"/>	5	UN_USED	279.461
<input type="checkbox"/>	RAID_00	IN_USED	558.764

OK Cancel

3. The RAID logical disk will be joined to the NASVG.



NOTE: An un-used physical disk drive can be used to join to the Storage Pool of NASVG but it is not recommended because the physical disk drive does not have RAID Level nor provide data redundancy. Select only a RAID disk to add into the Storage Pool for better data security.

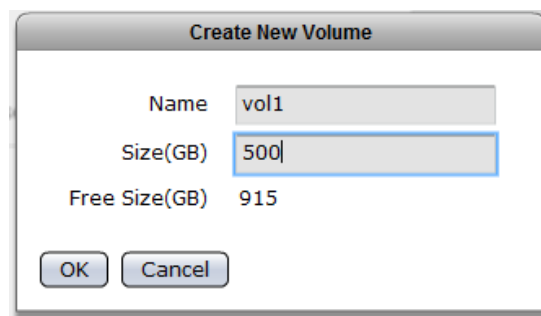
Create a Volume

Steps to Create a Volume:

1. Click *Create Volume*.
2. In the Create New Volume dialog box, enter the Volume Name and Size in GB. The Free NASVG capacity will show the available capacity that can be used. Click *OK* when done.



NOTE: The volume name does not allow space in-between characters. Valid characters are A-Z, a-z, and 0-9.

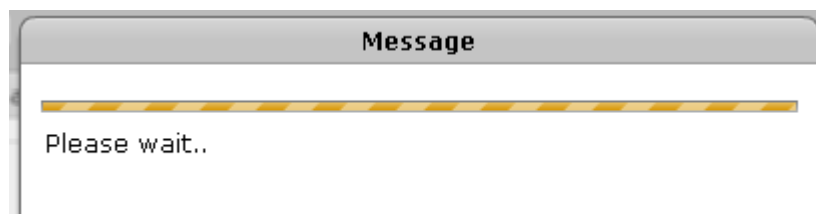


The 'Create New Volume' dialog box contains the following fields and buttons:

Field	Value
Name	vol1
Size(GB)	500
Free Size(GB)	915

Buttons: OK, Cancel

3. 1A message will be displayed.



4. The new Volume will be created.

Delete a Volume

Steps to Delete a Volume:

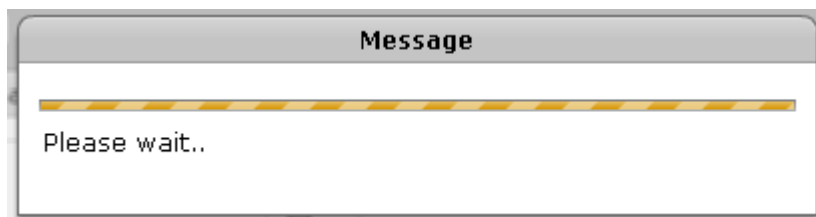


WARNING! Be careful when using this function. Make sure the data in the volume and all its share folders are no longer needed or a backup has been made before deleting the volume

1. Click the *Delete* button of the Volume to be deleted.
2. A warning message will be displayed. Click *Yes* to proceed with deletion.



3. A message window will be displayed.



4. The Volume will be deleted.

The screenshot displays the Storage/Share management interface. On the left, the 'Storage Information' panel shows details for 'NASVG' (Size: 1862 GB, Disk: RAID_00). A pie chart indicates 'Free Size: 1346GB 72.28%' and 'Used Size: 516GB 27.71%'. At the bottom are 'Join Disk' and 'Create Volume' buttons. On the right, the 'Volume List' panel shows two volumes: 'home' (Size: 10.00 GB, Used Size: 0.3223 GB) and 'vol1' (Size: 500.00 GB, Used Size: 0.03223 GB). Each volume has 'Delete' and 'Extend' buttons. The 'vol1' volume also has an 'iSCSI' button. A 'Refresh' button is located at the top right of the interface.

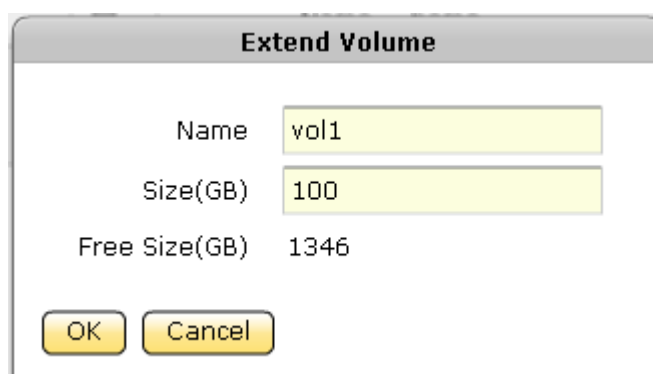
Extend a Volume Capacity



NOTE: The capacity of a Volume can be extended many times as long as there is available free space in the NASVG.

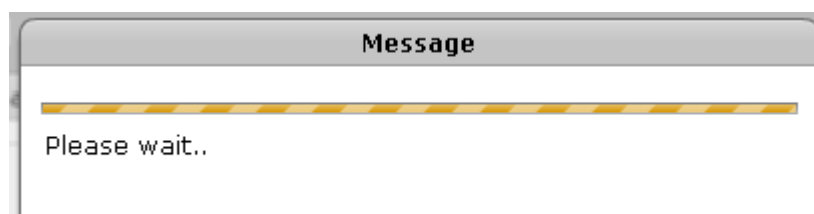
Steps to Extend a Volume:

1. Click the *Extend* button of the Volume to be extended.
2. A dialog box will be displayed. Enter the additional capacity that will be added to the Volume in the *Size(GB)* box. Click *OK* when done.



The 'Extend Volume' dialog box has a title bar with the text 'Extend Volume'. Inside, there are three labels with corresponding input fields: 'Name' with the value 'vol1', 'Size(GB)' with the value '100', and 'Free Size(GB)' with the value '1346'. At the bottom, there are two buttons: 'OK' and 'Cancel'.

3. A message will be displayed.



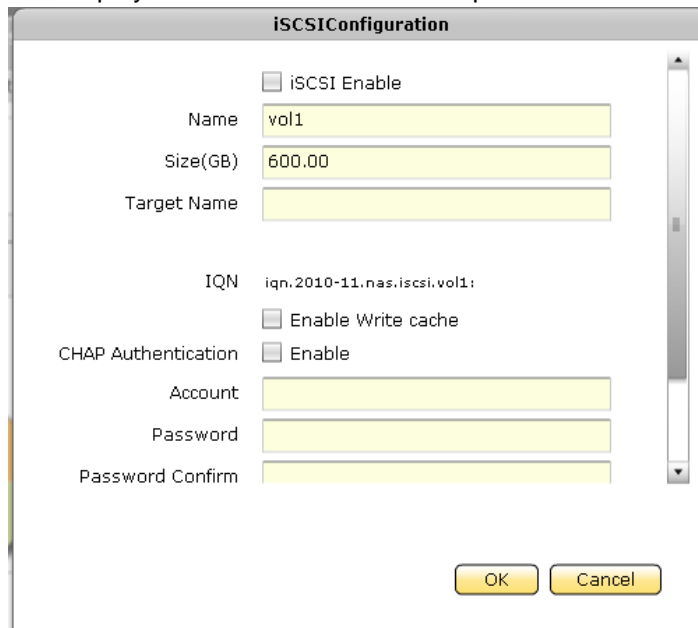
The 'Message' dialog box has a title bar with the text 'Message'. Below the title bar is a progress bar with a yellow and orange striped pattern. Below the progress bar, the text 'Please wait..' is displayed.

4. The total Volume capacity will be increased.

Setup Volume as iSCSI Target

Steps to Setup Volume as iSCSI Target:

1. Click the *iSCSI* button of the Volume to be setup.
2. A dialog box will be displayed. Tick the *iSCSI Enable* option to enable iSCSI function. Enter the



The iSCSI Configuration dialog box contains the following fields and options:

- ☐ iSCSI Enable
- Name:
- Size(GB):
- Target Name:
- IQN:
- ☐ Enable Write cache
- CHAP Authentication: ☐ Enable
- Account:
- Password:
- Password Confirm:
- OK button
- Cancel button

Target name. To enable authentication, tick the *Enable* box in Authentication then enter an Account name. Enter the password in Password box and Password Confirm box. Click *OK* when done.



NOTE: When Authentication is used, the same Account and Password must also be used in iSCSI initiator to successfully connect to the NAS iSCSI target device. Password length must be 12 to 16 characters.



NOTE: By default, the iSCSI Volume (LUN) write cache option is disabled. To enable write cache on iSCSI target LUN, tick the *Enable Write Cache* option.

3. A warning message will be displayed. Select *Yes* to proceed.



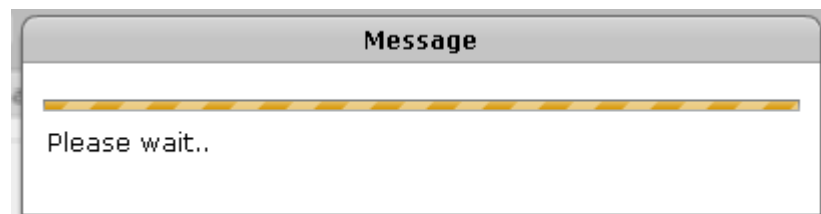
4. Another warning message will be displayed. Select *Yes* to proceed.



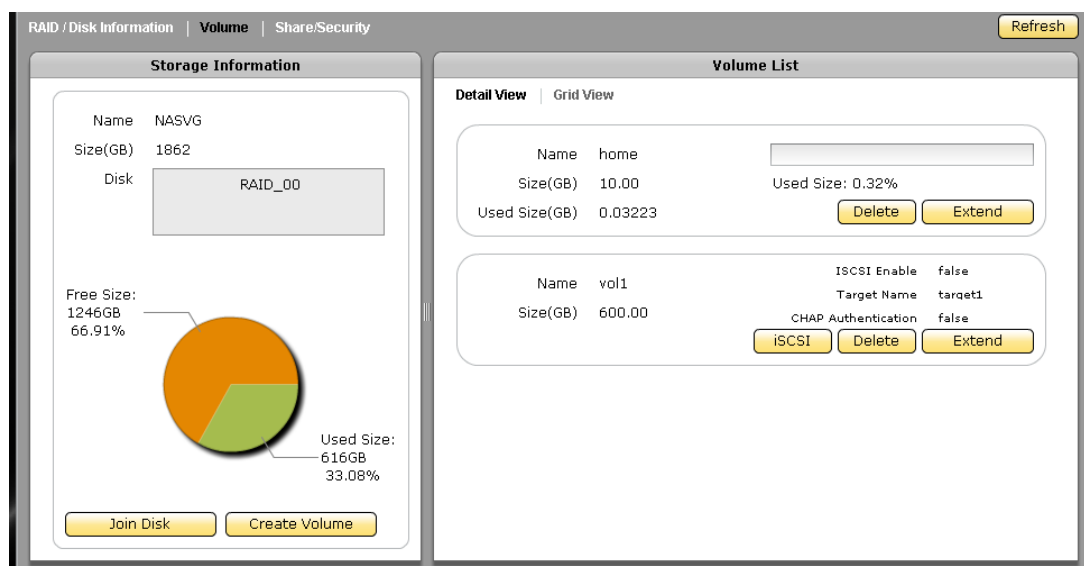
NOTE: Make sure the volume does not contain important data in its share folders. Select Yes in this step will confirm formatting the volume for iSCSI use, all data in this volume will be deleted.



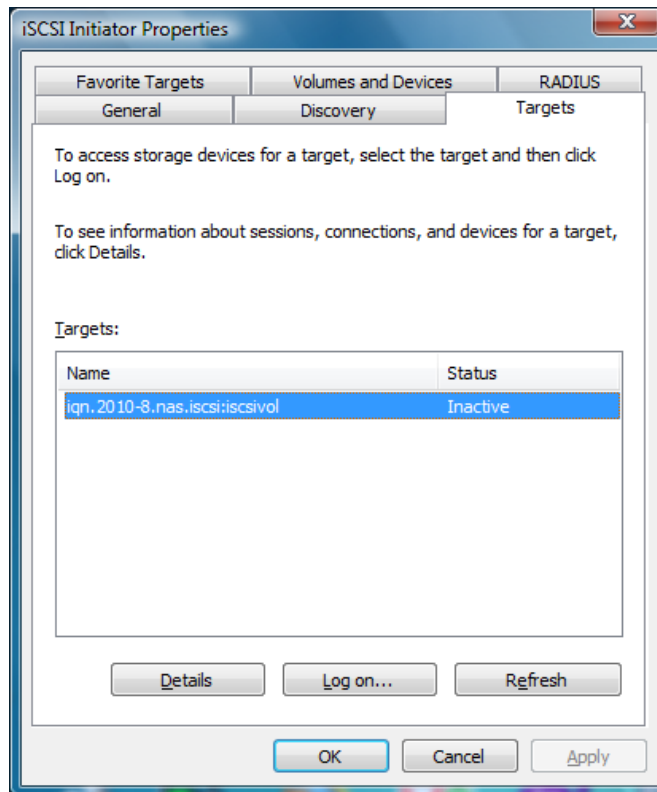
5. A message will be displayed.



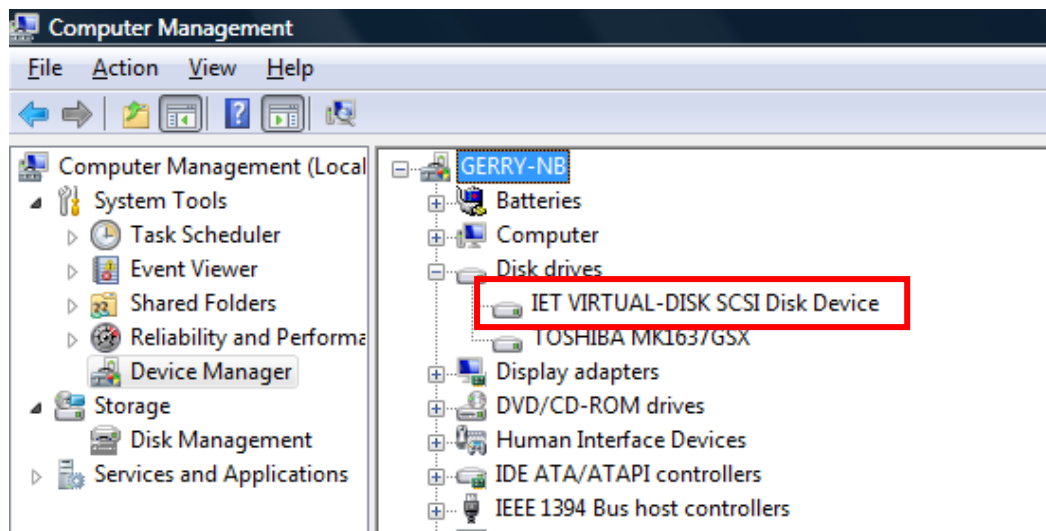
6. The Volume iSCSI function is ready.



7. Connect to iSCSI Target Volume from host computer with iSCSI Initiator. Log on to target device. Use the account and password if set in iSCSI Configuration.



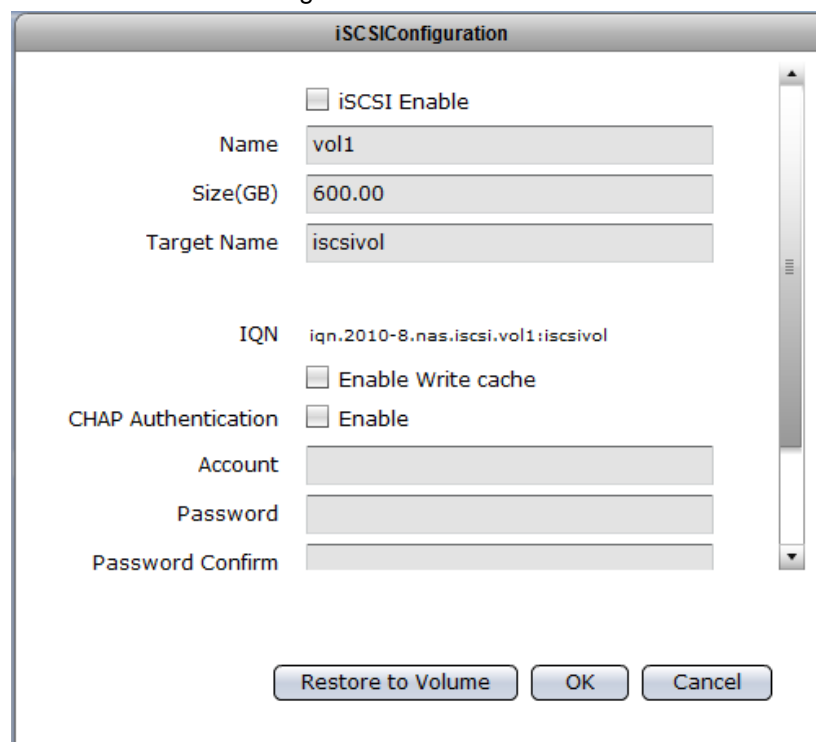
8. After successful connection, the iSCSI device will be shown in Disk Drives list.



Disable iSCSI Configuration in a Volume

Steps to Disable the iSCSI Configuration in a Volume:

1. Select the Volume with iSCSI Configuration and click the *iSCSI/* button. Remove the check mark

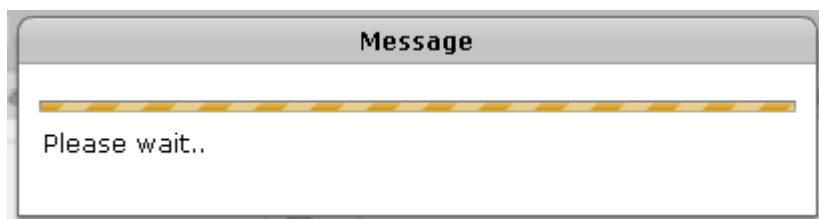


on the *iSCSI Enable* box. Click *OK* when done.

2. A warning message will be displayed. Select *Yes* to proceed.



3. A message will be displayed.



4. The iSCSI function of the Volume will be disabled.

Remove iSCSI Configuration and Restore to NAS Volume

Steps to Remove iSCSI Configuration and Restore to NAS Volume:

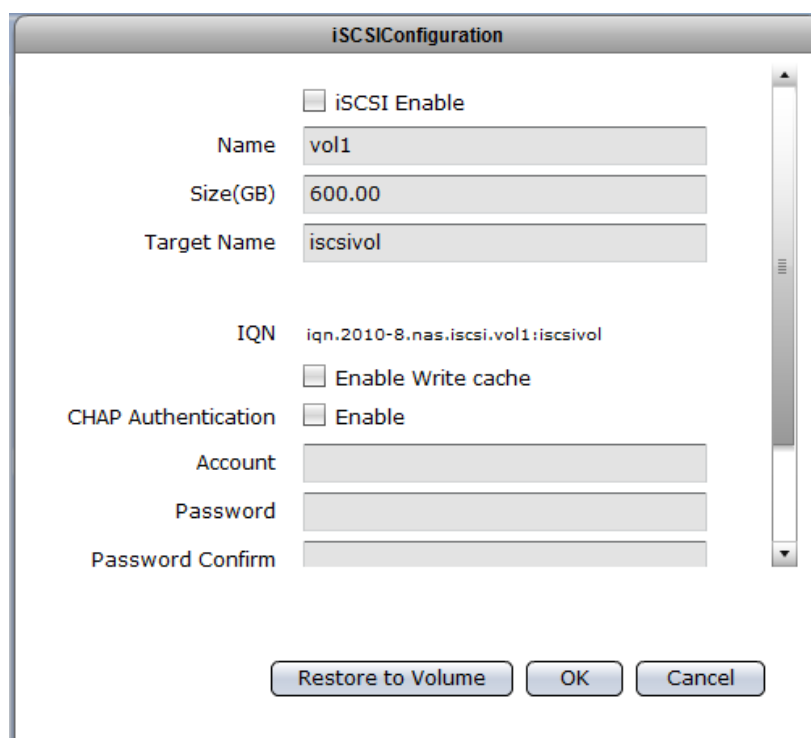


WARNING: When iSCSI Configuration is removed and volume is restored as basic NAS volume, all the data in the volume previously configured as iSCSI Target are deleted.



NOTE: The iSCSI Configuration must be disabled first before the Volume can be restored as basic NAS volume. See previous Section on how to disable iSCSI configuration.

1. Select the Volume with iSCSI Configuration and click the *iSCSI* button. Click the *Restore to Volume* button.



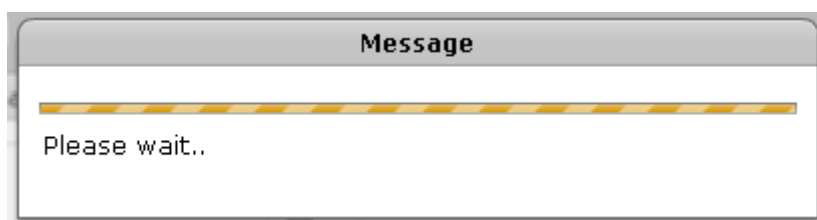
The iSCSI Configuration dialog box contains the following fields and controls:

- ☐ iSCSI Enable
- Name: vol1
- Size(GB): 600.00
- Target Name: iscsiivol
- IQN: iqn.2010-8.nas.iscsi.vol1:iscsiivol
- ☐ Enable Write cache
- CHAP Authentication: ☐ Enable
- Account: [text field]
- Password: [text field]
- Password Confirm: [text field]
- Buttons: Restore to Volume, OK, Cancel

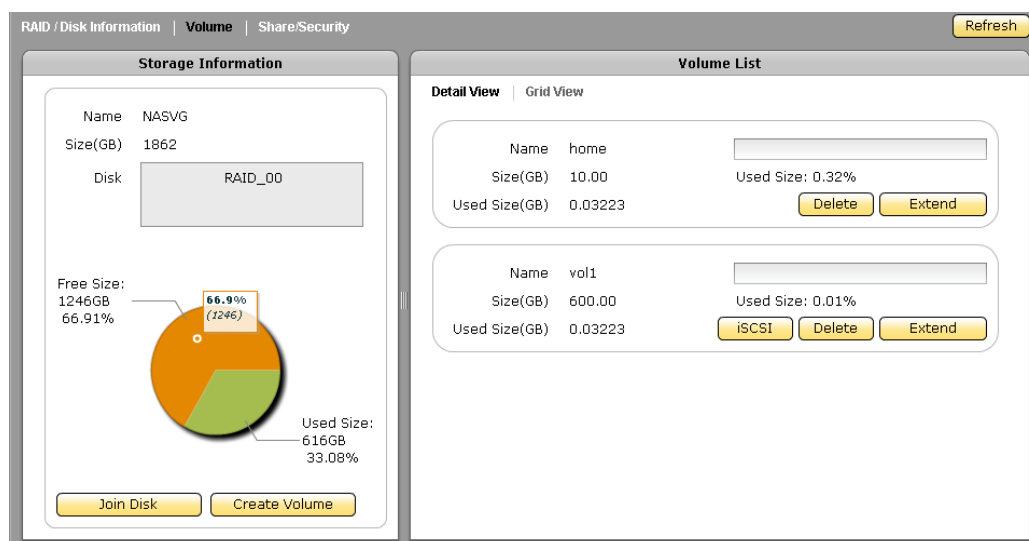
2. A warning message will be displayed.



3. A message will be displayed.

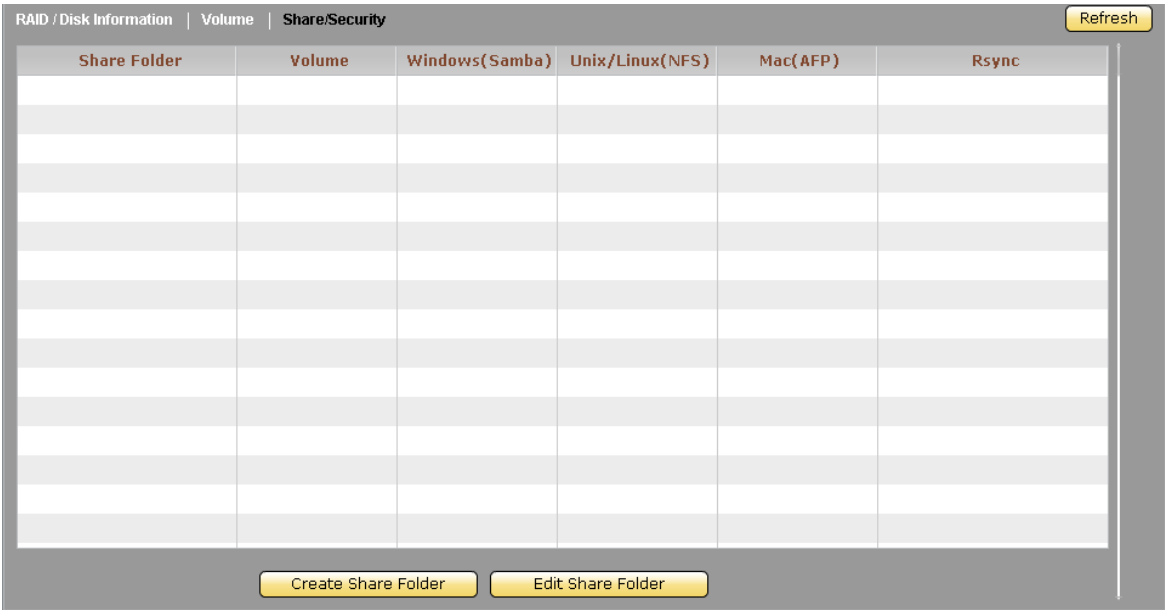


4. The iSCSI Configuration will be removed and the volume is restored as basic NAS volume.



Share/Security

Click the Share/Security tab. The Share and Security Configuration window will be displayed. In this window, you can configure the protocol settings as well as assign share access permission.



Share/Security Information Screen

Share Folder	Displays the share folder name
Volume	Shows the volume name where the share was created
Windows (Samba)	Shows the status if Samba / CIFS protocol is enabled (Yes) or not (No) in the share folder
UNIX/Linux (NFS)	Shows the status if NFS protocol is enabled (Yes) or not (No) in the share folder
Mac (AFP)	Shows the status if AppleTalk protocol is enabled (Yes) or not (No) in the share folder
Rsync	Shows the status if Rsync is enabled (Yes) or not (No) in the share folder

Share/Security Options

Create Share Folder	Used to create a new share folder
Edit Share Folder	Used to edit settings of an existing share folder
Refresh	Used to update the information displayed in the screen

Create New Share Folder

Steps to Create New Share Folder:

1. Click *Create Share Folder*.
2. The Share Folder Basic Configuration screen will be displayed. Configure the necessary options.

RAID / Disk Information | Volume | Share/Security Refresh

Share Info

Basic Privilege

Share Name:

Volume:

Owner:

☐ Public

Protocol Setting

Windows(Samba)

☒ Enable Samba Sharing

☐ Case Sensitive

☒ Files Begin with Dots

Max. connection:

Unix/Linux(NFS)

Mac(AFP)

Rsync

Apply Privilege Delete Save Cancel

Share Configuration Options

Share Name	Enter the share folder name
Volume	Select the Volume where the share folder will be created
Owner	Set the owner of the share folder. By default, admin owns all share folders
Public	When enabled (checked), the share folder is accessible to all users



NOTE: The share folder name does not allow space in-between characters.

NOTE: If the share folder is designated as WEB target share folder, do not enable *Public* option.

Share Configuration Buttons:

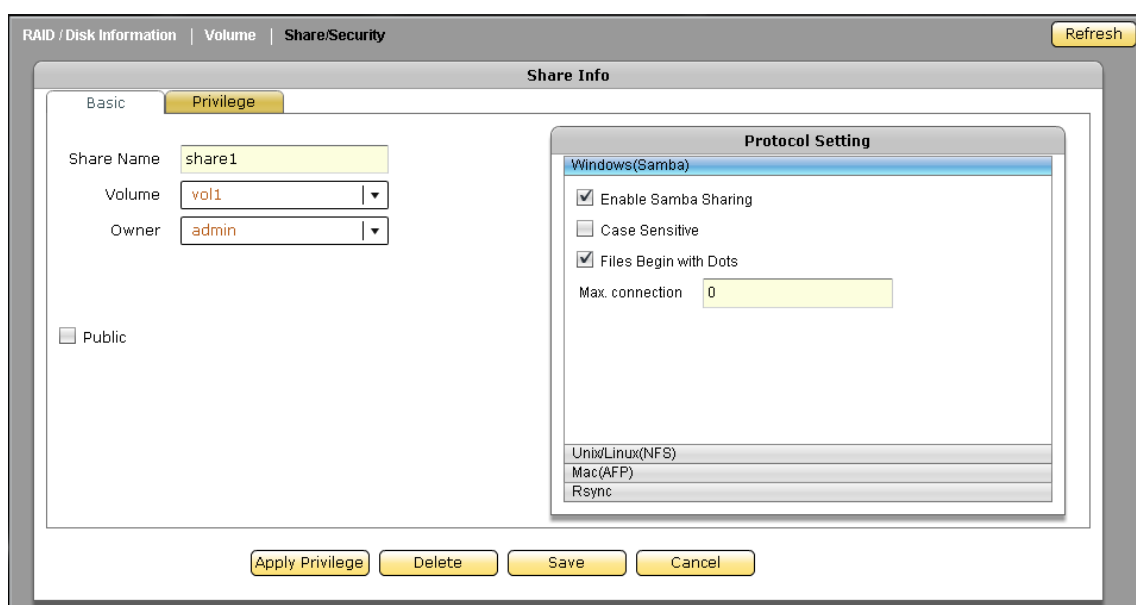
Apply Privilege	Use this to propagate the ACL from the parent share folder (the share name created in this GUI) into its child directories or sub-directories (sub-folders) and files. For example, if user1 has read/write permission on a sub-directory but read-only on the main share folder, after applying privilege, user1 will now have a read-only permission on the sub-directory.
Delete	Use this to delete the share folder.
Save	Use this to save changes made.
Cancel	Use this to undo changes made

3. In the Protocol Setting window, setup the Windows (Samba) protocol options.

Windows (Samba) Configuration Options

Enable Samba Sharing	Used to enable Samba protocol. When checked, the share folder can be accessed via Samba protocol
Case Sensitive	This controls whether filenames are case sensitive or not. Default is disabled
Files Begin with Dots	This controls whether files that begin with a dot will become hidden files. Default is disabled
Max connection	This option limits the number of simultaneous connections at a certain time. A value of zero (default) means an unlimited number of connections will be possible in this share

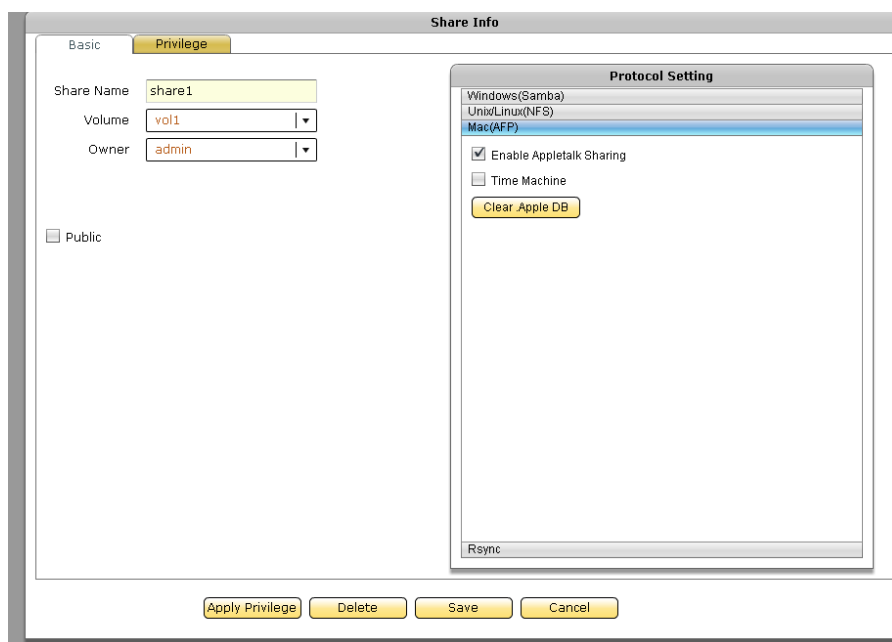
4. Select *Unix/Linux(NFS)* option in Protocol Setting window. The NFS protocol configuration screen is displayed. If share will be accessed by UNIX/Linux clients, setup the necessary options.



Unix/Linux (NFS) Configuration Options

Enable NFS Sharing	Used to enable or disable NFS protocol. When enabled (checked), the share folder can be accessed via NFS protocol
Synchronize Write Operation	Use this option to enable or disable write caching
Allow Root Access	Use this option to allow or disallow access by root super-user account
Insecure	This option provides higher security. If this option is enabled, only the ports under 1024 are allowed access to the share folder.
Subtree Check	Use this option to enable or disable subtree checking. A subtree check happens if a subdirectory of a filesystem is exported but the whole filesystem isn't, then whenever a NFS request arrives the server must check not only that the accessed file is in the appropriate filesystem (which is easy) but also that it is in the exported tree (which is harder).

5. Select *Mac(AFP)* option in Protocol Setting window. The AppleTalk protocol configuration screen is displayed. If share will be accessed by Mac clients, setup the necessary options.



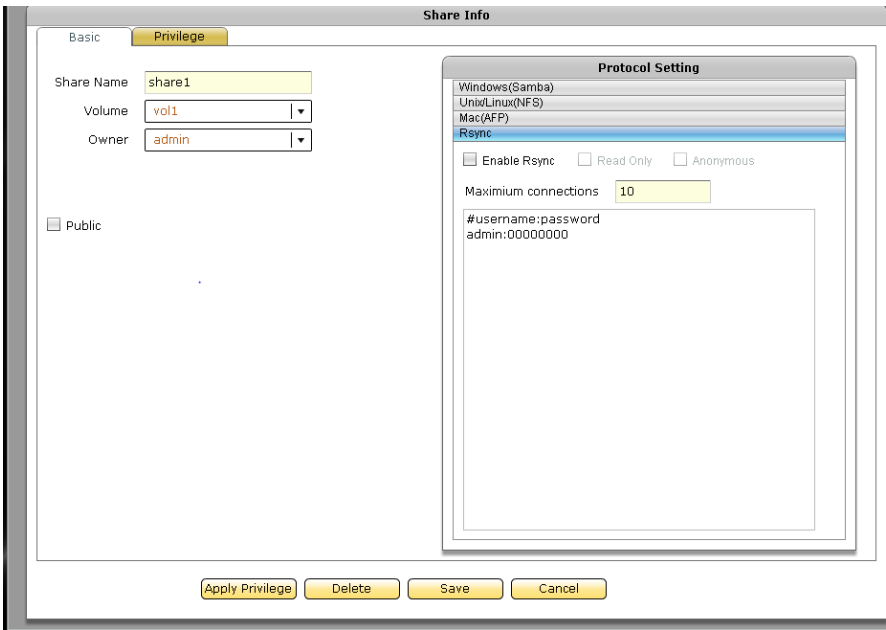
Mac (AFP) Configuration Options

Enable AppleTalk Sharing	Used to enable or disable AppleTalk protocol. When enabled, the share folder can be accessed via AppleTalk protocol
Time Machine	Used this option to enable Time Machine function on the share folder. The NAS share folder will become Time Machine backup target destination
Clear .AppleDB	Use this button to delete the .AppleDB hidden folder (including all files in it) on the share folder.



Note that newer Mac OS X versions support SMB protocol, and therefore will be able to connect to NAS share folder using SMB protocol, without enabling *Mac(AFP)*.

6. Select *Rsync* option in Protocol Setting window. The Rsync configuration screen is displayed. If share will be used for Rsync, setup the necessary options.



Rsync Configuration Options

Enable Rsync	Used to enable or disable Rsync Server function on this share folder. When enabled (checked), an Rsync client can connect to this share folder and upload or download files via Rsync.
Read Only	When checked, all files within this share will be read only to any Rsync client
Anonymous	When checked, anonymous connections will be accepted
Maximum connections	This specifies the maximum number of Rsync client that can connect to this share at a certain time.
#username:password	Use this option to edit Rsync account and password list. These accounts are the accounts that will be supplied by the Rsync client when connecting to this server

- Click **Save** when done. Then **Share Folder** will be created.

[illegible]

Assign Permission to Share

Steps to Assign User or Group Account Permission to the Share Folder:



NOTE: User or Group Accounts must have been created or NAS must have been joined to Windows AD or NIS domain.

Name	Type	Write	Quota (GB)
admin	Account	<input checked="" type="checkbox"/>	0
users	Group	<input checked="" type="checkbox"/>	0
***	IP	<input checked="" type="checkbox"/>	0

1. Select (highlight) the share folder then click *Edit Share Folder*, or double-click the share folder name.
2. Select the Privilege tab. In the Account option, select the user accounts that will be given access permission to the share folder, then click >>. The accounts will appear on the right screen. Set the Write and Quota(GB) options as needed.



NOTE: Use the << to remove an account from share folder privilege. Select the account then click <<. The account will be removed from the right column. By default, admin account and users group (group account for local NAS users) have permission to a share folder.

Account Privilege Options

Write	By default, this option is checked and the account is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark.
Quota(MB)	This option is used to assign user account quota to the share folder. Default is zero and no quota

- Click the Group option. Select the groups that will be given access permission to the share folder, then click >>. The groups will appear on the right screen. Set the Write and Quota(GB) options as needed.



NOTE: Use the << to remove a group from share folder privilege. Select the group then click <<. The group will be removed from the right column.

NOTE: By default, all local NAS accounts belong to *users* group and have share read/write access permission.

Name	Type	Write	Quota(GB)
admin	Account	<input checked="" type="checkbox"/>	0
users	Group	<input checked="" type="checkbox"/>	0
*. *.*	IP	<input checked="" type="checkbox"/>	0

Group Privilege Options:

Write	By default, this option is checked and the group is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark
-------	--

4. Click the IP option. Set up the IP address or addresses that will be allowed connections to the share folder, then click >>.The IP address will appear on the right screen.

RAID / Disk Information | Volume | ShareSecurity

Refresh

Share Info

Basic
Privilege

Account
Group
IP

IP

☒ Read
☒ Write

>>

<<

Name	Type	Write	Quota (GB)
admin	Account	<input checked="" type="checkbox"/>	0
users	Group	<input checked="" type="checkbox"/>	0
..*.	IP	<input checked="" type="checkbox"/>	0

Apply Privilege
Delete
Save
Cancel



NOTE: This option allows setting certain range of hosts to have an access to the NAS. By default, NAS will accept connections from any host (*. *.*.*). To allow connections only from certain IP address, remove *.*.* then add the IP address/range. For example, add 192.168.100.*. This will only allow connections from your private network 192.168.100 and all other connection will be refused.

NOTE: To remove an IP address from share folder privilege, select the IP address then click <<.

IP Privilege Setup Options

Read	This option allows Read access from the specified IP address or address range
Write	This option allows Write access from the specified IP address or address range

IP Privilege Edit Option

Write	By default, this option is checked and the IP address or range of IP address is given Read and Write permission to the share folder. To assign Read-Only permission, remove the check mark
-------	--

5. Click **Save** when done. The permissions will be set in the share folder.

Edit Share Folder

Steps to Edit Share Folder:

6. Select the share folder name then click *Edit Share Folder*.
7. Change the necessary options. Click *Save* when done.



NOTE: The Share Name cannot be modified.



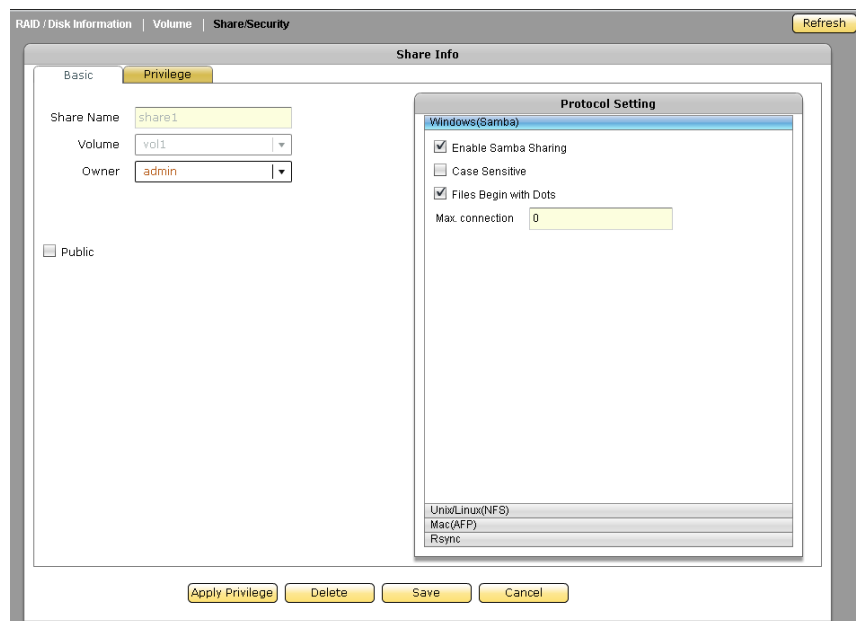
NOTE: If you want the same share folder privilege/permission to be propagated to existing sub-folders and files under the share folder, use the *Apply Privilege* button. A warning message will be displayed. Select *Yes* to confirm.



Delete Share Folder

Steps to Delete Share Folder:

1. Select the share folder name then click *Edit Share Folder*. Click *Delete*.



2. A warning message will be displayed. Select Yes to proceed. The share folder will be deleted.



WARNING! Be careful when using the *Delete* button. Make sure your data in the share is no longer needed or a backup has been made before deleting the share folder.

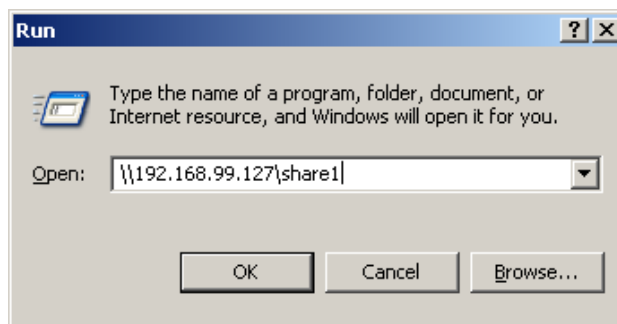
Accessing Share Folder from Windows Clients via Samba



NOTE: Make sure Samba service is enabled in System → Service, and Samba protocol is enabled in Storage/Share → Share/Security → Share → Protocol Setting → Windows(Samba).

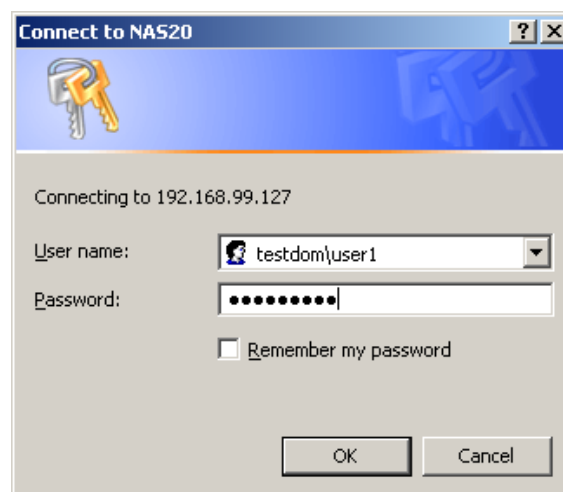
Make sure the account that will be used to login the share folder has permission or already added in Storage/Share → Share/Security → Share → Privilege. By default, all local NAS accounts, which belong to *users* group, have read/write permission to share folders.

1. To access the share folder from Windows client PC, click *Start* then *Run*. Enter in the Open input box as follows: \\x.x.x.x\share-name, where x.x.x.x is the NAS IP.
For example: \\192.168.99.127\share1



NOTE: You can also use the NAS host name, if DNS is setup in Network → Device Configuration and in DNS server (NAS host name is added).

2. Enter the login account and password. If login account is a Windows domain account, use the domain name followed by account name, such as Domain-name\Account-name. For example: testdom\user1

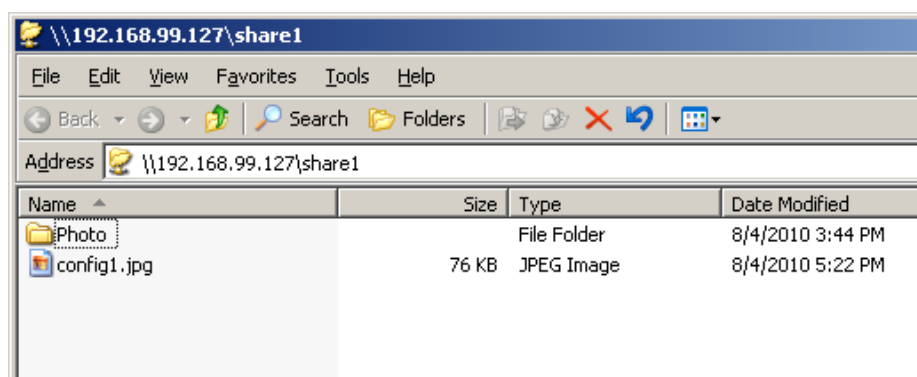




NOTE: If NAS is not joined to Windows domain and you will use a NAS local account, enter only the NAS account name and password.



3. Login to share is successful.



Accessing Share Folder from Linux/UNIX Clients via NFS



NOTE: Make sure NFS service is enabled in System → Service, and NFS protocol is enabled in Storage/Share → Share/Security → Share → Protocol Setting → Unix/Linux(NFS).

1. Login to console of Linux client. Change to root user, if necessary.
2. To check which share folders of NAS are accessible via NFS protocol and which path will be used for mounting, use the command `showmount -e x.x.x.x`, where x.x.x.x is the NAS IP.
For example: `showmount -e 192.168.99.127`

```
bash-3.00# showmount -e 192.168.99.127
Export list for 192.168.99.127:
/mnt/NAS/home *
/mnt/NAS/vol1/share1 *.*.*.*
bash-3.00#
```

3. Create local mount point, if not yet created.

```
-bash-3.00# mkdir /nfstest
-bash-3.00#
```

4. Mount the share folder via NFS.

The format for the mount command is:

`mount -t nfsx.x.x.x:/mnt/NAS/volume/share /local-mount-point`

x.x.x.x is the NAS IP.

Note that /mnt/NAS/volume-name/share-name is the complete path to NFS share as shown using the showmount command (step 2).

For example: `mount -t nfs 192.168.99.127:/mnt/NAS/vol1/share1 /nfstest`

```
bash-3.00# mount -t nfs 192.168.99.127:/mnt/NAS/vol1/share1 /nfstest
bash-3.00#
```

5. The share folder is mounted via NFS protocol. To check, use *mount* or *df -h* command.

mount

```
192.168.99.127:/mnt/NAS/vol1/share1 on /nfstest type nfs (rw,addr=192.168.99.127)
bash-3.00#
```

df -h

```
192.168.99.127:/mnt/NAS/vol1/share1
600G 4.3M 600G 1% /nfstest
bash-3.00#
```

Accessing Share Folder from Mac Clients



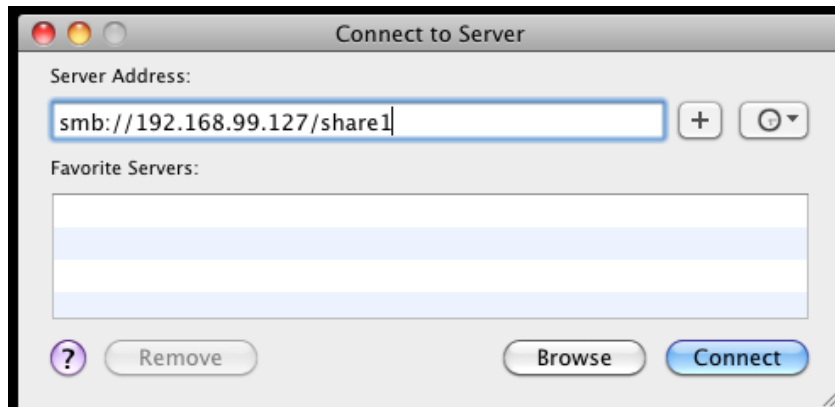
NOTE: By default, new Mac OS versions such as 10.4.x or later versions, support SMB protocol.

If Mac OS is older version, such as Mac OS 9, and will use AFP protocol to connect, the AFP protocol must be enabled in System → Service. Enable also Mac(AFP) in Storage/Share → Share/Security → Share → Protocol Setting.

Make sure the account that will be used to login the share folder has permission (already added in Storage/Share → Share/Security → Share → Privilege).

1. To connect to share folder via SMB protocol, in the Finder, select *Connect to Server* from the Go menu. The Connect to Server dialog box will be displayed.
2. In Server Address box, enter the path to the NAS share. Use the format: `smb://x.x.x.x/share-name` or `smb://NAS-host-name/share-name`.

For example: `smb://192.168.99.127/share1`



NOTE: You can also use the NAS host name instead of IP address, if DNS setting is configured in NAS → Network → Device Configuration, in Mac OS, and in DNS server.

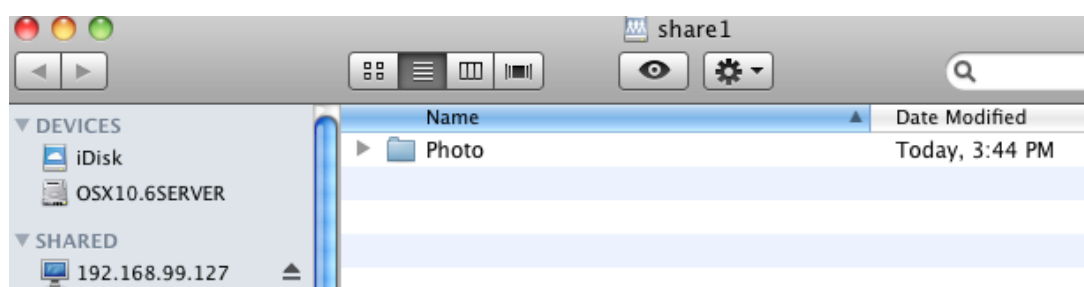
If you enabled AFPservice and Mac(AFP) Protocol Setting, and wanted to connect to NAS share folder via AFP, use the format: `afp://x.x.x.x/share-name`.

For example: `afp://192.168.99.127/share1`

3. Click the *Connect* button. The OS X system will contact the NAS, and display the SMB/CIFS File System Authentication screen.



4. Enter the Workgroup or Domain name, if there is (and if required), and a valid user name (for example: NAS local account) with permission to the share folder, and the password for the user name.
5. Click *OK* button. Once the Mac OS has connected to the share folder via SMB, you can see the directories/files under the share folder using Finder.



How to Setup Rsync

How to Setup the NAS as RsyncServer

1. In System → Service, enable SSH and Rsync services.

Information	Service	Time/UPS	Boot/Shutdown	Upgrade	Log	Notification	System Tools
Enable	Name	Start on Boot			Configuration		
<input checked="" type="checkbox"/>	Samba	<input checked="" type="checkbox"/>			Edit		
<input type="checkbox"/>	NFS	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	AFP	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	FTP	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	Telnet	<input type="checkbox"/>			Edit		
<input checked="" type="checkbox"/>	rsync	<input type="checkbox"/>			Edit		
<input checked="" type="checkbox"/>	SSH	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	iTunes	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	P2P	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	WEB	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	DHCP	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	MediaServer	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	Photo	<input type="checkbox"/>			Edit		
<input type="checkbox"/>	Printer	<input type="checkbox"/>			Edit		

2. In Storage/Share → Share/Security, select the share folder that will be used as RsyncServer target share folder. Click *Edit Share Folder*.

[illegible]

3. In Basic tab, select *Rsync* in Protocol Setting. Then tick *Enable Rsync*. Remove check mark in *Anonymous* option. Click *Save*.

RAID / Disk Information | Volume | Share/Security

Refresh

Share Info

Basic

Privilege

Share Name

share1

Volume

vol1

Owner

admin

☐ Public

Protocol Setting

Windows(Samba)

Unix/Linux(NFS)

Mac/AFP)

Rsync

☒ Enable Rsync ☐ Read Only ☐ Anonymous

Maximum connections

10

#username:password

admin:00000000

Apply Privilege

Delete

Save

Cancel

How to Setup the NAS as RsyncClient

The NAS can function as Rsync client using the Data Backup feature. To setup the NAS as Rsync client:

1. Select Data Backup. Click *Create*.
2. Setup Rsync client options. Enter the Backup Name and select the Backup Method as Rsync.



Select the share (only one share) that will be used for back up using Rsync. In the Client Options, setup the IP, Remote Path, Account, Password, and Mode.

Rsync Client Options

IP	the IP address of the remote Rsync server
Remote Path	the share name on the remote Rsync server
Account	the account name that will be required by the Rsync server for authentication
Password	the password of the account
Mode	Select the mode of file transfer, whether to upload to Rsync server or to download from Rsync server
More Options	Specify here the Rsync options to be used. For more information about Rsync options, please visit http://samba.org/ftp/rsync/rsync.html



NOTE: Only one share folder can be selected and used for Rsync backup, since the remote path is also single share folder.

Sample Setting

Name	rsynctest
Type	Share
Backup Method	Rsync
Select Shares to backup	share2 (selected)
Rsync Client Options	
IP	192.168.99.127
Remote Path	share1
Account	Admin
Password	00000000
Mode	Upload
More Options	-rvlHpogDt --progress

The screenshot shows the 'Backup List' window with the 'Schedule' tab selected. The 'Name' field is 'rsynctest', 'Type' is 'Share', and 'Backup Method' is 'Rsync'. Below these is a table 'Select Shares to backup' with columns 'Select', 'Name', and 'Type'. The table has three rows: 'RDX_Recorder' (Share), 'share1' (Share), and 'share2' (Share). The 'share2' row is selected with a checkmark. To the right, the 'Rsync Options' dialog box is open, showing 'Client' as the selected option. The 'Client Options' sub-dialog is also open, showing fields for IP (192.168.99.127), Remote Path (share1), Account (admin), Password (*****), Mode (Upload), and More Options (-rvlHpogDt --progress). The 'Save' and 'Cancel' buttons are at the bottom right.

Summary of Rsync default options

-r, --recursive	Recurse into directories
-v, --verbose	Increase verbosity. This option increases the amount of information given during the transfer
-l, --links	Copy symlinks as symlinks
H, --hard-links	Preserve hard links
-p, --perms	Preserve permissions. This option causes the receiving Rsync to set the destination permissions to be the same as the source permissions
-o, --owner	Preserve owner (super-user only). This option causes Rsync to set the owner of the destination file to be the same as the source file
-g, --group	Preserve group. This option causes Rsync to set the group of the destination file to be the same as the source file
-D, --devices	Preserve device files
-t, --times	Preserve times
--progress	Show progress during transfer (shown in the Rsync log)

3. Click **Save**.

Backup List | **Schedule**

Name
rsync_test

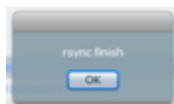
Name: rsync_test
Type/Method: Share/Rsync(Client)
Backup Items: share2(Share)
Schedule: Undefined
Status: No activity

Select	Name	Status	Log

Delete

Create **Edit** **Backup**

4. To execute the Rsync backup that was just created, select the backup name from the backup List, if not yet selected, and then click **Backup**.

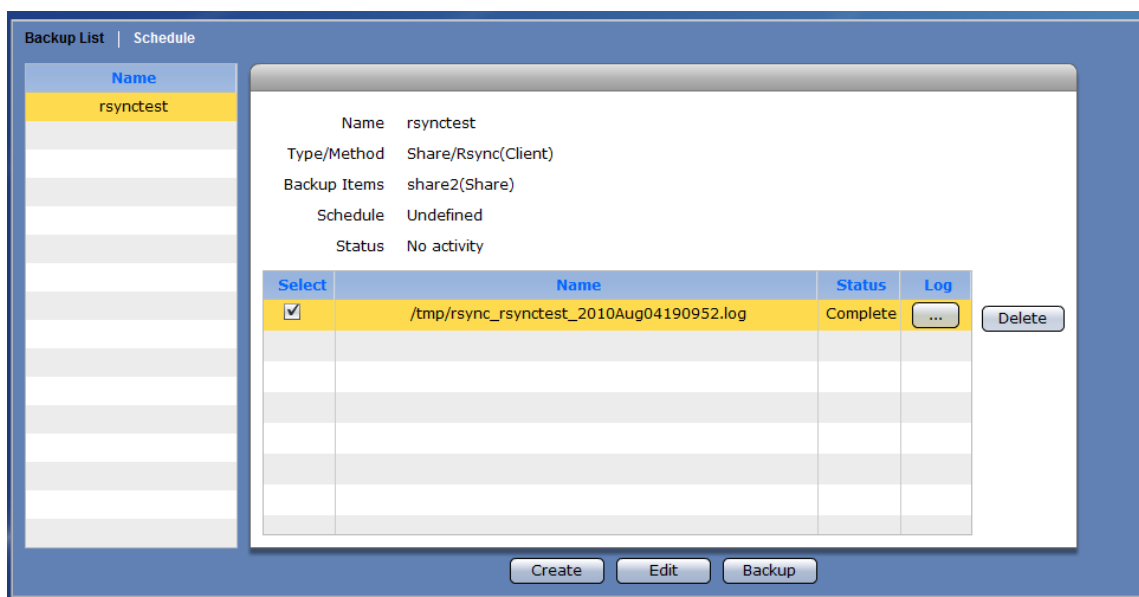


5. When backup is finished, a pop-up message will be displayed. Click **OK**.

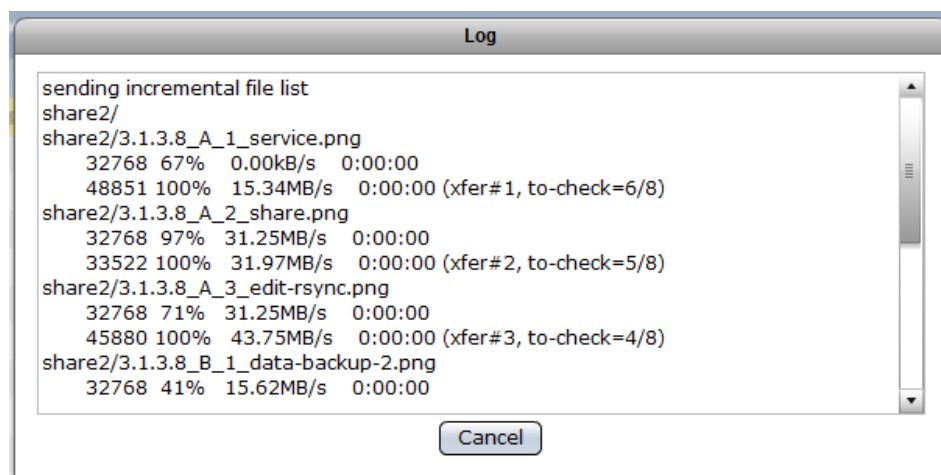


NOTE: The Rsync backup process can take a while if there are many files to be updated / uploaded or downloaded.

- To view the Rsync log, select the backup log from the log list and click ... button in the Log column.



- The Rsync log for the selected log file will be displayed. Click *Cancel* to close.



- The Rsync backup can also be run on schedule. For more information how to setup backup by schedule, refer to page **Fehler! Textmarke nicht definiert..**

How to Setup Time Machine

The NAS supports Time Machine to backup data from Mac to NAS share folder automatically. For more information about Time Machine, please visit Apple's website at:
<http://www.apple.com/macosx/what-is-macosx/time-machine.html>

To setup Time Machine:

1. In NAS management GUI, select *Storage/Share* icon. Then select the *Share/Security* menu. Create a new share, if necessary, or edit an existing share.

[illegible]

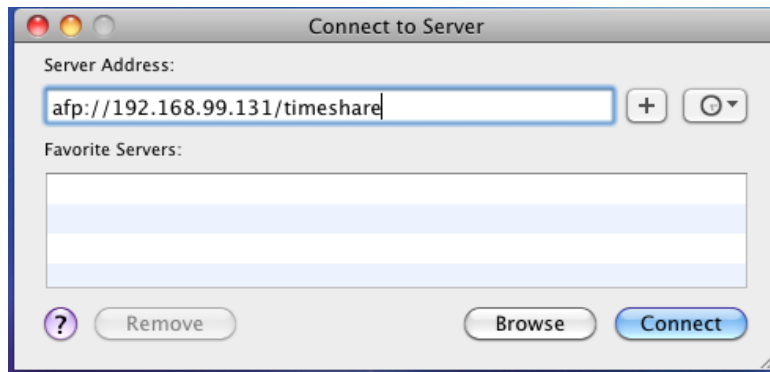
2. To create a new share folder for use with Time Machine, click *Create Share Folder*.

3. Enter the share folder name, for example: timeshare. In the Protocol Setting on the right pane, select *Mac(AFP)*, and then tick *Enable AppleTalk Sharing* and *Time Machine* options. Click *Save*.

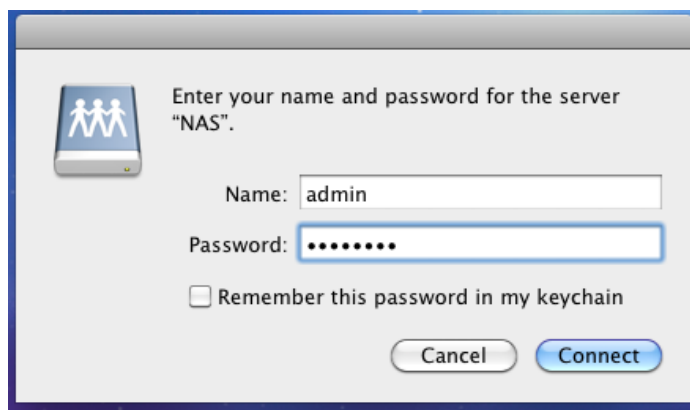
4. In System → Service menu, make sure the AFP service is enabled. If not, enable the service.

Information		Service		Time/UPS		Boot/Shutdown		Upgrade		Log		Notification		System Tools	
Enable		Name		Start on Boot		Configuration									
<input checked="" type="checkbox"/>		Samba		<input checked="" type="checkbox"/>		Edit									
<input type="checkbox"/>		NFS		<input type="checkbox"/>		Edit									
<input checked="" type="checkbox"/>		AFP		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		FTP		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		Telnet		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		rsync		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		SSH		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		iTunes		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		P2P		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		WEB		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		DHCP		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		MediaServer		<input type="checkbox"/>		Edit									
<input type="checkbox"/>		Photo		<input type="checkbox"/>		Edit									

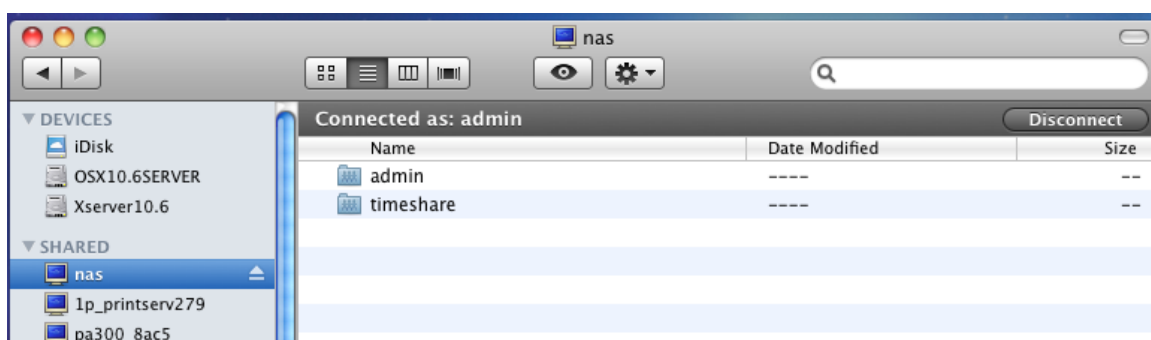
5. On Mac machine, to login to the NAS share folder via AFP, select *Go* then *Connect to Server*.
6. In Server Address, enter *afp://x.x.x.x/timeshare*, where x.x.x.x is the NAS IP address and timeshare is the share folder previously configured for Time Machine use. Then click *Connect*.



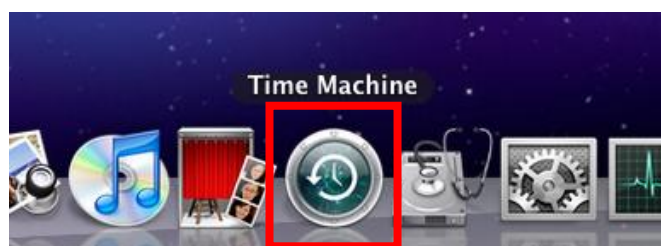
7. Enter a valid Account Name and Password; use account which has permission to the NAS share folder. In this example, admin account is used. Then click *Connect*.



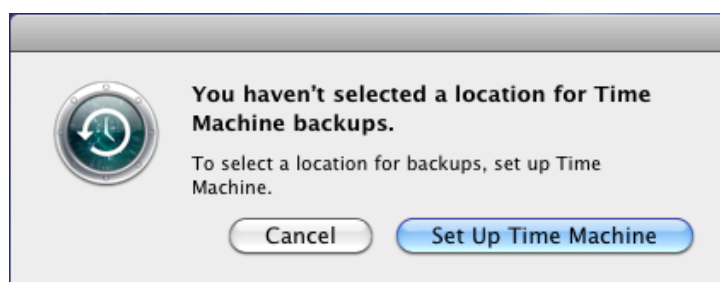
8. The Mac will be connected to the NAS share folder.



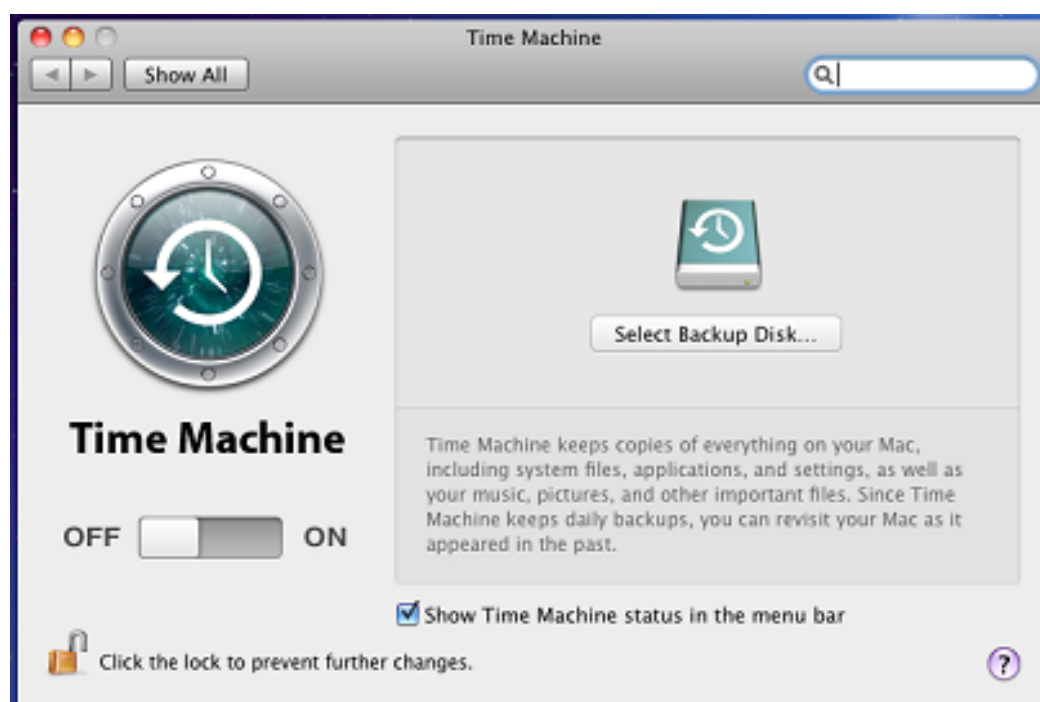
9. To setup Time Machine in Mac, open Time Machine.



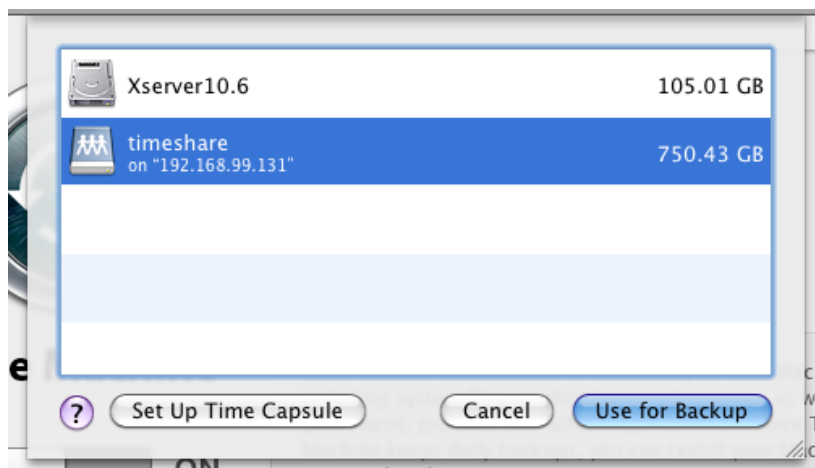
10. If the Time Machine has not been previously setup, a message will be shown as below. Then select *Set Up Time Machine*.



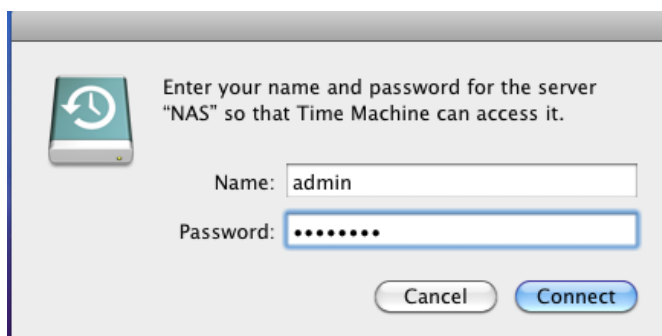
11. The Time Machine screen will be displayed. Click *Select Backup Disk...*



12. Select the *timeshare* disk and click *Use for Backup*.



13. Enter the account name and account password to access the NAS share folder via Time Machine, and then click *Connect*.



14. After successful connection, the Time Machine is setup. The available space on the NAS share folder will be shown. The Next Backup time is also displayed.



15. Done. The Time Machine will automatically backup to the designated NAS share folder.

Device Configuration

Click the Network icon to display the Network Device Configuration screen.

Device Configuration

ADS/NIS

DHCP(Internet Gateway)

P2P

Refresh

Host Name

actiCube

Domain

domain

DNS Suffix

domain.local

DNS Server

192.168.1.7

Edit Hosts Table

Edit LmHost Table

WINS Server

Apply

Reset

Network Adaptor

Device

eth0

IP

192.168.1.78

Gateway

192.168.1.1

Subnet Mask

255.255.255.0

MTU

1500

MAC address

00:30:67:52:6E:CF

Enable on Boot

☒

Dynamic IP(BOOTP/DHCP)

☐

Default Gateway

☒

Apply

Reset

Device

eth1

IP

Gateway

Subnet Mask

MTU

1500

MAC address

00:30:67:52:6E:D0

Enable on Boot

☐

Dynamic IP(BOOTP/DHCP)

☒

Default Gateway

☐

Apply

Reset

Create Trunking

Device Configuration Options

Host Name	The NetBIOS name of NAS. It should be unique
Domain	Enter the Windows domain name or workgroup name. For example: <i>MYDOMAIN</i> . Default is <i>Workgroup</i>
DNS Suffix	The DNS suffix is the name appended to server name to complete the server's FQDN. For example: <i>MYDOMAIN.LOCAL</i>
DNS Server	Enter the DNS Server IP address. DNS server is responsible for mapping the machine name and IP address
WINS Server	Enter the WINS Server IP address. WINS Server is responsible for the setting NetBIOS name resolution
Edit Hosts Table	Use this button to edit machine name and IP address mapping in the Hosts table. This is optional
Edit LmHost Table	Use this button to define the resolution of NetBIOS in the Lmhosts table. This is optional.
Reset	Use this button to undo or clear any changes made
Apply	Use this button to save the changes made

NOTE: After you edit host table configuration and click *OK*, you still need to click *Apply* for changes to be saved.

NOTE: After you edit lmhost table configuration and click *OK*, you still need to click *Apply* for changes to be saved.

Network · / actiNAS Manager 85

Network Adaptor Configuration Options

Device	Shows the network device name. eth0 is the device name for LAN0 gigabit port.
IP	Shows the current IP address of the network device. Configure the IP address as necessary.
Gateway	Show the current IP address of the Gateway. To edit, enter the Gateway IP address
Subnet Mask	Shows the current subnet mask setting. To edit, type in the new subnet mask number.
MTU	The MTU size (Maximum Transmission Unit) in bytes. To modify the MTU size for this interface, select the new MTU size. Options are: 1500 (default), 2000, 3000, 4000, 5000, 6000
MAC address	Shows the MAC address of network device.
Enable on Boot	If enabled, this adapter will be active when actiNAS starts up
Dynamic IP (BOOTP/DHCP)	If checked, this specifies that this network device will dynamically obtain an IP address from a Dynamic Host Configuration Protocol (DHCP) server or from a Bootstrap Protocol (BOOTP) server
Default Gateway	If checked, the default gateway will be enabled in this adapter. A default gateway is a local IP router that is used to forward packets to destination beyond the local network. Only one default gateway in the NAS can be enabled in a certain time.
Reset	Use this button to undo or clear any changes made.
Apply	Use this button to save the changes made.
Create Trunking	Use this button to configure network trunking.

Configure Network Trunking

Steps to Configure Trunking Function:



NOTE: It is necessary that the network switch supports the type of trunking mode that will be used. Otherwise, the network connections may become unstable.

1. In Network → Device Configuration screen, click *Create Trunking*.
2. The Create Trunking Dialog window will be displayed. Configure the necessary options.

Create Trunking Configuration Options

Target Device	Shows the network device names that can be included in Trunking. To select, press the <i>Ctrl</i> key and at the same time click the network device names.
Mode	Select the Trunking Mode that will be used.

Trunking Mode Options

Fault Tolerance	Active-Backup policy: If the active Ethernet port fails, the standby Ethernet port will become active. This enhances the availability of access to the NAS.
Load Balance / Fault Tolerance	XOR policy: Transmit based on source MAC address XOR with destination MAC address. This selects the same slave for each destination MAC address. This mode provides load balance and fault tolerance.
Dynamic Link Aggregation	802.3ad policy: Combines multiple physical network links into a single logical link for increased performance. Transmits and receives on all slaves in the active aggregator. Pre-requisite: the network switch must support IEEE 802.3ad.
Load Balance	ALB (Adaptive Load Balancing) policy: The receive load balancing is achieved by ARP negotiation and does not require special switch support.

3. Click *OK* when done. A warning message will be displayed. Click *Yes* to proceed.



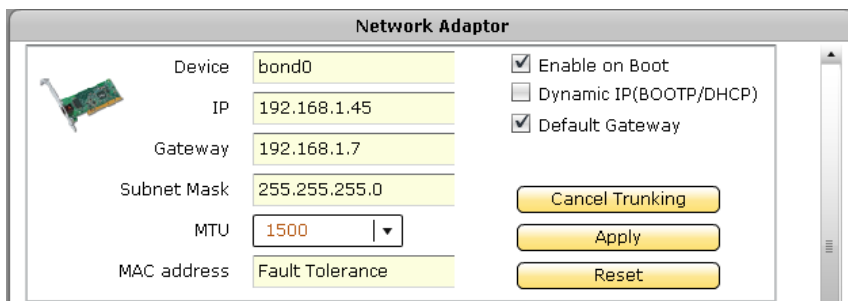
4. The NAS network configuration will be restarted. Re-login to NAS GUI.
5. The Trunking function is configured. The member network devices will be shown as deactivated and cannot be configured. A new network device name *bond0*, which is the Trunking device, will be shown.

A screenshot of the "Network Adaptor" configuration window. It contains three sections for network devices. The first section is for "bond0", which is the Trunking device. It has fields for IP (192.168.1.45), Gateway (192.168.1.7), Subnet Mask (255.255.255.0), MTU (1500), and MAC address (Fault Tolerance). It also has checkboxes for "Enable on Boot" (checked), "Dynamic IP(BOOTP/DHCP)" (unchecked), and "Default Gateway" (checked). There are buttons for "Cancel Trunking", "Apply", and "Reset". The second section is for "eth0", which is a member device. It has fields for IP, Gateway, Subnet Mask, MTU (1500), and MAC address (00:30:67:52:6E:CF). It has checkboxes for "Enable on Boot" (checked), "Dynamic IP(BOOTP/DHCP)" (unchecked), and "Default Gateway" (unchecked). There are buttons for "Apply" and "Reset". The third section is for "eth1", which is another member device. It has a field for Device (eth1) and a checkbox for "Enable on Boot" (checked). There is a "Create Trunking" button at the bottom right.

Cancel Network Trunking

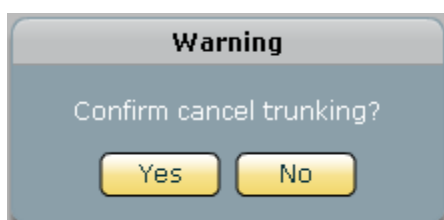
Steps to Cancel Trunking Function:

1. Find the device name *bond0* then click *Cancel Trunking*.

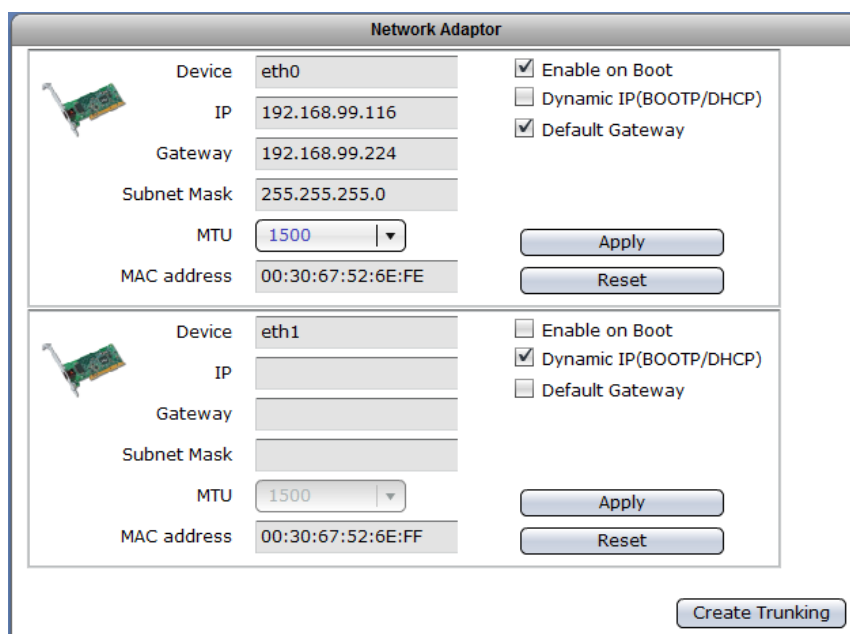


The screenshot shows the 'Network Adaptor' configuration window. On the left, there is a network card icon. The configuration fields for device 'bond0' are: IP (192.168.1.45), Gateway (192.168.1.7), Subnet Mask (255.255.255.0), MTU (1500), and MAC address (Fault Tolerance). On the right, there are checkboxes for 'Enable on Boot' (checked), 'Dynamic IP(BOOTP/DHCP)' (unchecked), and 'Default Gateway' (checked). At the bottom right, there are three buttons: 'Cancel Trunking', 'Apply', and 'Reset'.

2. A warning message will be displayed. Click Yes to proceed.



3. The Trunking function will be cancelled and the network configuration will be restarted. Re-login to NAS GUI. The network device eth0 will be automatically configured and get the IP address previously assigned to the Trunking device.



The screenshot shows the 'Network Adaptor' configuration window with two sections. The top section is for device 'eth0' with IP (192.168.99.116), Gateway (192.168.99.224), Subnet Mask (255.255.255.0), MTU (1500), and MAC address (00:30:67:52:6E:FE). The bottom section is for device 'eth1' with empty fields for IP, Gateway, Subnet Mask, and MTU (1500), and MAC address (00:30:67:52:6E:FF). Both sections have checkboxes for 'Enable on Boot', 'Dynamic IP(BOOTP/DHCP)', and 'Default Gateway'. At the bottom right, there is a 'Create Trunking' button.

ADS/NIS

Windows ADS/PDC or NIS domain accounts can be imported and integrated into the NAS.



NOTE: Some network settings required in configuring the Windows Domain Authentication option must have been configured in Network → Device Configuration, such as Domain/Workgroup name, DNS Suffix, and DNS Server.

Device Configuration | **ADS/NIS** | DHCP(Internet Gateway) | P2P

Windows

☐ Enable Domain Authentication

Host Name

Domain/WorkGroup

DNS Suffix

Domain Server IP ☒ Auto Detect Domain IP

Logon Administrator

Password

PDC/ADS Mode

☐ Enable NTLMv2 Authentication

☒ Enable Client Channel

Save

Reset

NIS

☐ Enable NIS Authentication

NIS Domain

NIS Server

Save

Reset

Join NAS to Windows AD Domain

Steps to Join NAS in the Windows AD Domain:

1. Select Network → Device Configuration. Enter the Domain Name and DNS Suffix. A DNS Server IP can also be entered if necessary. Refer to page 85 for the Device Configuration options.

Device Configuration | ADS/NIS | DHCP(Internet Gateway) | P2P

Host Name: actiCube
Domain: domain
DNS Suffix: domain.local
DNS Server: 192.168.150.5
WINS Server:
Edit Hosts Table
Edit LmHost Table
Apply Reset

Network Adaptor

Device: eth0
IP: 192.168.44.224
Gateway: 192.168.1.22
Subnet Mask: 255.255.255.0
MTU: 1500
MAC address: 00:30:67:52:6E:CF
Enable on Boot: ☒
Dynamic IP(BOOTP/DHCP): ☐
Default Gateway: ☒
Apply Reset

Device: eth1
IP: 192.168.1.1
Gateway: 192.168.1.1
Subnet Mask: 255.255.255.0
MTU: 1500
MAC address: 00:30:67:52:6E:D0
Enable on Boot: ☒
Dynamic IP(BOOTP/DHCP): ☐
Default Gateway: ☐
Apply Reset

Create Trunking

2. A warning message will be displayed. Select Yes to apply new settings.



3. Select Network → ADS/NIS tab.

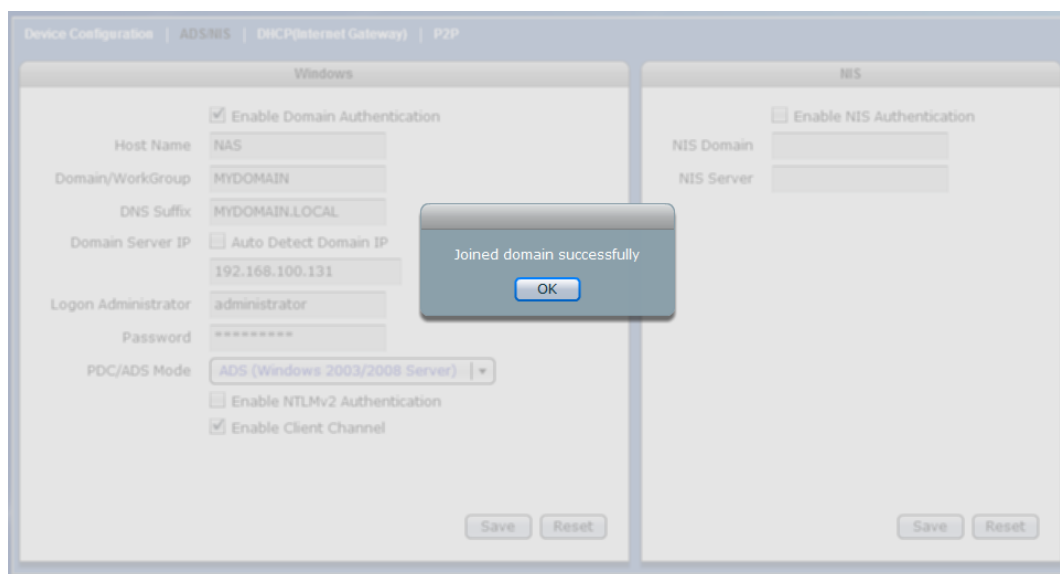
4. In Windows screen, check the *Enable Domain Authentication* option. Configure the necessary options.
 - If Domain Server IP is automatically detected, the Domain Server IP will be displayed. If you want to join NAS to a specific Domain Server IP, remove the check mark in *Auto Detect Domain IP* and manually enter the Domain Server IP address.
 - Enter the Domain Administrator account.
 - Enter the Domain Administrator's password.
 - Select the PDC/ADS mode.
 - Click Save when done.

The screenshot displays the 'Device Configuration' window with the 'Windows' tab selected. The 'Enable Domain Authentication' checkbox is checked. The 'Domain Server IP' field shows '192.168.1.50' and the 'Auto Detect Domain IP' checkbox is unchecked. The 'PDC/ADS Mode' is set to 'ADS (Windows 2003/2008 Server)'. The 'NIS' tab is also visible, showing 'Enable NIS Authentication' is unchecked and the 'NIS Domain' and 'NIS Server' fields are empty.

Windows Domain Authentication Options

Enable Domain Authentication	Use this option to enable or disable Windows Domain Authentication.
Host Name	Indicates the NetBIOS name of NAS as configured in Network → Device Configuration tab.
Domain/Workgroup	Shows the domain/workgroup name as configured in Network → Device Configuration tab.
DNS Suffix	Shows the DNS Suffix as configured in Network → Device Configuration tab.
Domain Server IP	Shows the IP address of the domain server which is automatically detected when <i>Auto Detect Domain IP</i> option is enabled. If <i>Auto Detect Domain IP</i> option is disabled, manually type the domain server IP address.
Logon Administrator	Enter the administrator's logon account in the domain server.
Password	Enter the password of administrator's logon account in the domain server.
PDC/ADS Mode	Select the mode type of the domain server. <i>This can be ADS (Windows 2003/2008 Server) or PDC (Windows NT Server).</i>
Enable NTLMv2 Authentication	This parameter determines whether or not smbclient will attempt to authenticate itself using the NTLMv2 encrypted password. If enabled, NAS will only sent NTLMv2 and LMv2 responses. NTLMv2 authentication protocol is available only on WindowsNT4 with SP4 and Windows 2000 or later. Default is disabled.
Enable Client Channel	This controls whether the client offers or even demands the use of the netlogonschannel. Default is auto, means it offers the schannel but does not enforce it.
Reset	Use this button to undo or clear any changes made.
Save	Use this button to save the changes made.

5. A message will be displayed when NAS is successfully joined the domain. Click **OK**.



NOTE: When NAS is successfully joined to the Windows domain, the domain user accounts will appear in Account list.

NOTE: The NAS cannot be joined to the Windows domain if NASVG does not exist (NASVG is not yet initialized).

Join NAS to NIS Domain

Steps to Join NAS in the NIS Domain:

1. Select Network → ADS/NIS tab.
2. In NIS screen, check the *Enable NIS Authentication* option. Configure the necessary options.
 - Enter the NIS Domain name.
 - Enter the NIS Server IP address.
3. Click *Save* when done.

NIS Authentication Options

Enable NIS Authentication	Use this option to enable or disable NIS Domain Authentication.
NIS Domain	Enter the NIS domain name.
NIS Server	Enter the IP Address of NIS server.
Reset	Use this button to undo or clear any changes made.
Save	Use this button to save the changes made.



NOTE: When NAS is successfully joined to the NIS domain, the domain user accounts will appear in Account list.

NOTE: The NAS cannot be joined to the NIS domain if NASVG does not exist (NASVG is not yet initialized).

DHCP (Internet Gateway)

NAS provides Internet gateway function for administrator to easily enable and disable the Internet access for users. This function integrates with DHCP service, routing and NAT.

DHCP (Internet Gateway) Options

IP range starting from	Means the starting address of range of private IP addresses for DHCP.
IP range ending with	Means the ending address of range of private IP address for DHCP.
Private Net	The network device connected to the private network.
WAN	The network device connected to the Internet / WAN.



NOTE: This function must be configured in System → Service tab. Select DHCP service.

NOTE: Please refer to page 117 on how to use DHCP (Internet Gateway).

Device Configuration

ADS/NIS

DHCP(Internet Gateway)

P2P

Please configure this function in System --> Service

IP range starting from

192.168.1.100

IP range ending with

192.168.1.150

Private Net

eth1

WAN

eth0

Status

This screen will show current download or upload connections.

Device Configuration

ADS/NIS

DHCP(Internet Gateway)

P2P

Status

Server

Option

Shares

Download

New download

Remove

Pause

Resume

Refresh

ID	File Name	Downloaded	Size	Active	Status(kb/s)

Upload

ID	User	File Name	Uploaded	Downloaded	IP ADDRESS	Port

Options

New download	Use this button to add download item. Then select either download link or torrent file.
Remove	Use this button to remove a selected download item.
Pause	Use this to pause the downloading of selected item.
Resume	Use this to resume downloading of selected item.
Refresh	Use this to refresh current download status.

Emulk Download link

☒ Link

Please input link

OK

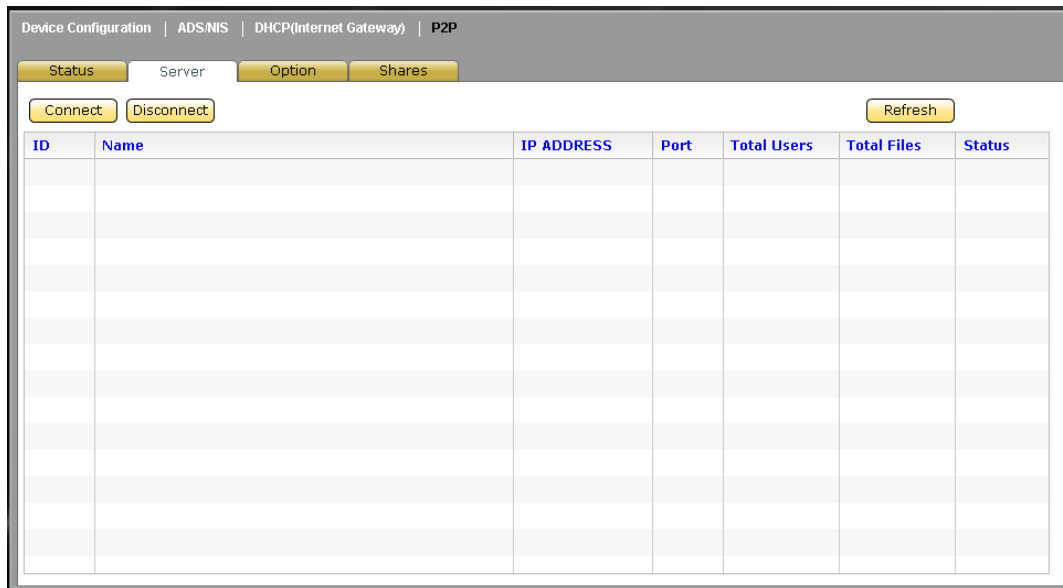
☐ Torrent

select torrent file

Cancel

Server

This screen allows connection to and disconnection from server.

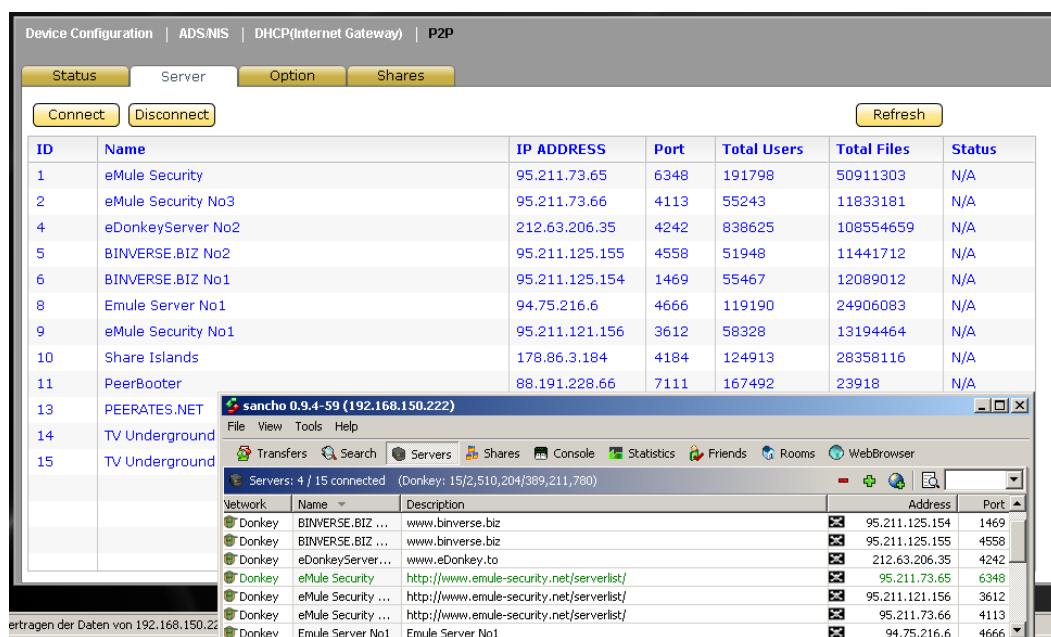


Options

Connect	Use this button to connect to a selected server.
Disconnect	Use this button to disconnect to a selected server.
Refresh	Use this to refresh current connection status.



NOTE: You can use [sancho](http://sancho.awardspace.com/) (<http://sancho.awardspace.com/>) (latest version is 0.9.4-59) to edit the server list.



Option

Use this screen to configure download options.

Device Configuration | ADS/NIS | DHCP(Internet Gateway) | P2P

Status

Server

Option

Shares

Option

Maximum download number

Maximum download rate(Kbytes/s)

Maximum upload number

Maximum upload rate(Kbytes/s)

Apply

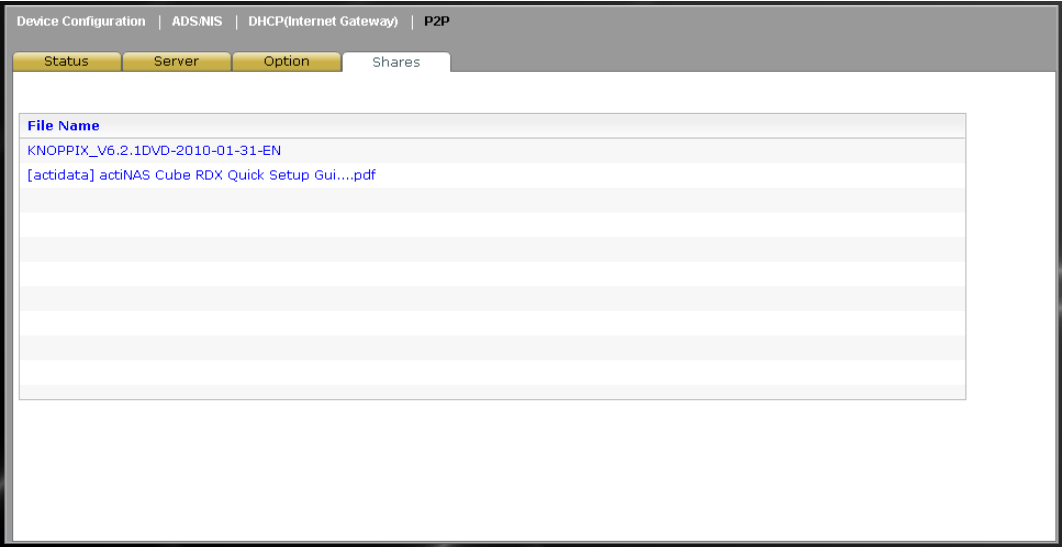
Reset

Options

Maximum download number	Use this option to set the maximum number of download connections.
Maximum download rate	Use this option to set the maximum download transfer rate.
Maximum upload number	Use this option to set the maximum number of upload connections.
Maximum upload rate	Use this option to set the maximum upload transfer rate.
Apply	Use this button to save changes made.
Reset	Use this button undo any changes made and load previously saved setting.

Shares

This screen displays the list of files downloaded or being downloaded in the target share.



Example of Download from Link and Torrent

- 1. Click *New download*.

Device Configuration | ADS/NIS | DHCP(Internet Gateway) | P2P

Status

ServerOptionShares

Download

New downloadRemovePauseResumeRefresh

ID	File Name	Downloaded	Size	Active	Status(kb/s)

Upload

ID	User	File Name	Uploaded	Downloaded	IP ADDRESS	Port

- 2. To download using link, enter the download link or paste the link in the box provided. Click *OK*.

3.

Emulk Download link

☒ Link

Please input link

iBactidata%5D%20actiNAS%20Cube%20RDX%20Quick%20Setup%20Guide%20eng%2Bwarranty.pdf

OK

☐ Torrent

select torrent file

Cancel

To download from another link, enter the link or paste the link in the box then click **OK**.

Emulk Download link

Link

Please input link

http://www.actidata.com/fileadmin/templates/CUBE/proNAS-2.0.05.tar

OK

Torrent

select torrent file

Cancel

4. Two items will be displayed under Download.

5.

Device Configuration | ADS/NIS | DHCP(Internet Gateway) | P2P

Status

Server

Option

Shares

Download

New download

Remove

Pause

Resume

Refresh

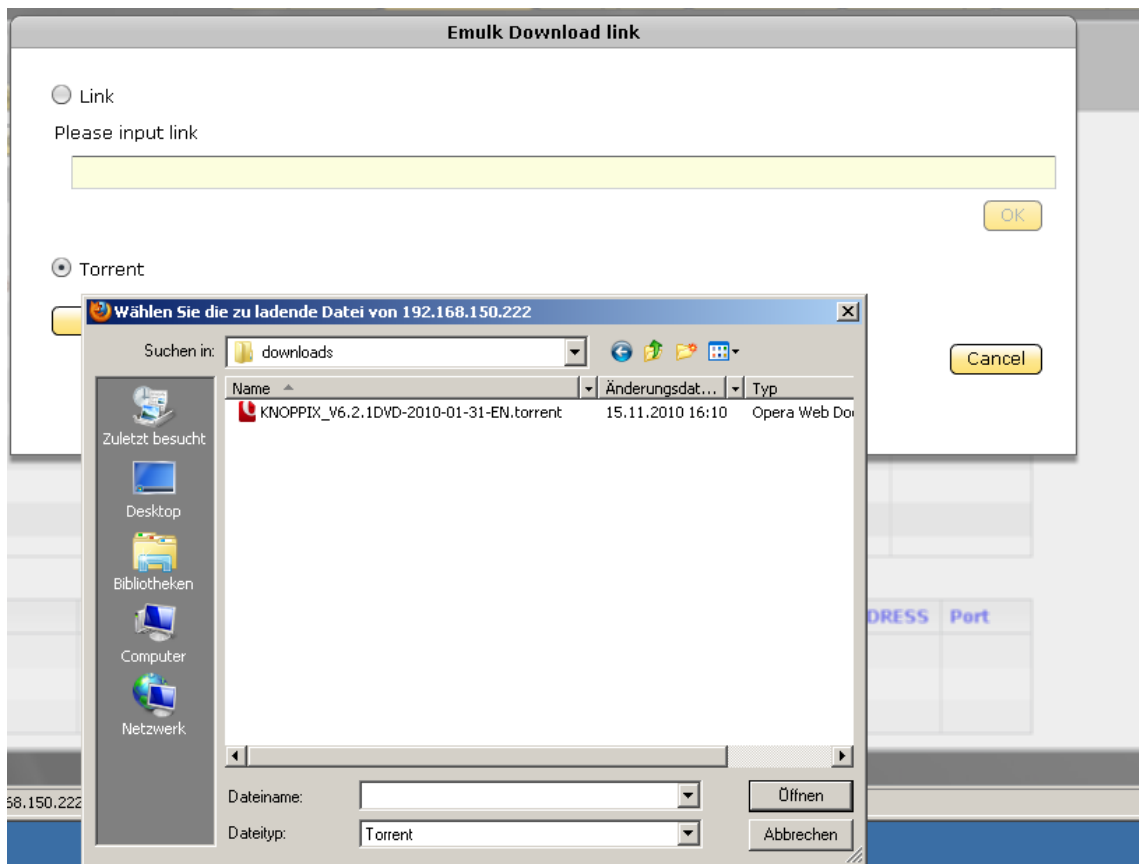
ID	File Name	Downloaded	Size	Active	Status(kb/s)
1	[actidata] actiNAS Cube RDX Quick Setup Gui....pdf	1.3MB	1.9MB	1/1	7.2
2	proNAS-2.0.05.tar	759.5KB	66.7MB	1/1	11.7

Upload

ID	User	File Name	Uploaded	Downloaded	IP ADDRESS	Port

To download using torrent, click *New download* then select *Torrent* option. Click *select torrent file*.

6. Select the torrent file. Click *Open*.



7. The download item will be added in the Download list.

Device Configuration | ADS/NIS | DHCP(Internet Gateway) | P2P

Status

Server

Option

Shares

Download

New download

Remove

Pause

Resume

Refresh

ID	File Name	Downloaded	Size	Active	Status(kb/s)
2	proNAS-2.0.05.tar	1.2MB	66.7MB	1/1	-
4	KNOPPIX_V6.2.1DVD-2010-01-31-EN	18.3MB	3.6GB	41/283	249.6

Upload

ID	User	File Name	Uploaded	Downloaded	IP ADDRESS	Port

8. To remove an item, select the item and click *Remove*.

9. To pause downloading, select an item and click *Pause*.

10. To resume downloading, select a paused item then click *Resume*.

System

The System function is used to configure different NAS system settings and services, such as: Service configurations, Date and Time Zone setting, Serial Port setting, NAS Firmware Upgrade, Reboot and Shutdown functions, Log Information, Event Notification via email, and various System Tools.

System Information

The screenshot displays the actiNAS STORAGE MANAGER interface. At the top, there are navigation tabs: System, Network, Storage/Share, Account, Data Backup, and File Manager. Below these, there are sub-tabs: Information, Service, Time/UPS, Boot/Shutdown, Upgrade, Log, Notification, and System Tools. The 'Information' sub-tab is selected, showing a list of system parameters on the left and a hardware status table on the right.

Parameter	Value
Host Name	actiCube
Domain/WorkGroup	actidata
Version	2.0.05
Time	01/06/2008, Europe/Berlin
Model	actiNAS Cube RDX
CPU	Intel Celeron 430 @ 1.80GHz
Memory(KB)	1025212
Kernel Ver.	2.6.35.6
Languages	English

Enable Timeout: ☒
Enable Internal RDX Backup: ☐

Device	Status
Slot1	27 °C
Slot2	26 °C
Slot3	23 °C
Slot4	23 °C
Slot5	23 °C
Fan	1950 RPM
CPU Fan	1247 RPM
CPU Temp	+54.0 °C
M/B Temp	+26.0 °C

The System Information screen shows the following:

Host Name	Indicates the NetBIOS name of NAS as configured in Network → Device Configuration
Domain/Workgroup	Shows the domain/workgroup name as configured in Network → Device Configuration
Version	Shows the NAS firmware version
Time	Shows the NAS system time and time zone
Model	Shows the NAS system model
CPU	Shows the NAS system processor type
Memory (KB)	Shows the amount of NAS system memory (RAM) in KB
Kernel Ver.	Shows the NAS kernel version
Languages	Choose the preferred language from available options: <i>English, Traditional Chinese, Simplified Chinese, Japanese, Korean, and Spanish</i>
Skin	Shows the color schemes available as skin color. Current options are: <i>Black, Blue</i> (default), and <i>Green</i> .
Enable Timeout	This is enabled by default. When there is no activity in the actiNAS Manager GUI, admin will be automatically logged out after 15 minutes. To disable timeout, remove check mark in Enable Timeout.
Enable Internal RDX Backup	If enabled then backup to RDX in Data Backup available. Disabled shows only remote and local disk backup functionality
Device	Shows the device information such as Slot number, system fan, CPU fan, CPU temperature, and motherboard temperature.
Status	Shows the current status of each device, such as slot temperature, system fan and CPU fan speed in RPM, and CPU and motherboard temperature reading.

The System Information screen also shows the number of disk drives detected by the NAS system. The device icon is green when device is in good condition, and shows red when device is failed.

Service

The administrator can manage and enable/disable the various NAS system services. At the same time, some service can be configured in the Service tab.

Information	Service	Time/UPS	Boot/Shutdown	Upgrade	Log	Notification	System Tools
Enable	Name	Start on Boot	Configuration				
<input checked="" type="checkbox"/>	Samba	<input checked="" type="checkbox"/>	Edit				
<input type="checkbox"/>	NFS	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	AFP	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	FTP	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	Telnet	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	rsync	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	SSH	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	iTunes	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	P2P	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	WEB	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	SNMP	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	DHCP	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	MediaServer	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	Photo	<input type="checkbox"/>	Edit				
<input type="checkbox"/>	Printer	<input type="checkbox"/>	Edit				

Service Description....when one of the services is selected, the description of the service will be showed here.

Service Name

Samba	Provides CIFS file sharing. MS Windows users need this service <i>Enabled</i> to be able to access the NAS share folders. By default, this service is enabled. The <i>Windows(Samba)</i> Protocol Setting for the specific Share folder should also be enabled. Refer to page 57 for more details on how to configure Samba protocol setting in a Share folder.
NFS	Provides Network File System (NFS) file sharing. UNIX and Linux users need this service <i>Enabled</i> to be able to access the NAS share folders. The <i>Unix/Linux(NFS)</i> Protocol Setting for the specific Share folder should also be enabled. Refer to page 57 for more details on how to configure NFS protocol setting in a Share folder.
AFP	Provides Apple Filing Protocol. Mac OS users can use AFP to access the NAS share folders, and need this service <i>Enabled</i> . The <i>Mac(AFP)</i> Protocol Setting for the specific Share folder should also be enabled. Refer to page 57for more details on how to configure Mac(AFP) protocol setting.
FTP	Provides users with access to NAS using File Transfer Protocol (FTP). After enabling this service, NAS accounts can login to NAS via FTP using their account and password. Use an FTP client application to login to NAS and transfer files via FTP.
Telnet	Provides users with access to NAS using Telnet. After enabling this service, NAS accounts can remote login to NAS console via Telnet using their account and password. Use a Telnet client application, such as PuTTY http://www.putty.org/ to login via Telnet. NOTE: Admin can limit access via Telnet by disabling this service. It is recommended to access the NAS console only when needed, such as when troubleshooting the NAS. NAS configuration should be done in the GUI and not in the console.
Rsync	Provides Rsync Server function to NAS. Rsync client can connect to NAS, such as another NAS with Rsync client function configured. Refer to page 57Step 6 for Rsync Server setup options. Data can be backed up to NAS using Data Backup function. Refer to page Fehler! Textmarke nicht definiert. how to configure Rsync client to do backup via Rsync backup method. For more information about Rsync function, please visit http://samba.org/rsync/ .

SSH	Provides remote management connection to NAS using Secure Shell (SSH) with more secure level. Use an SSH client application, such as PuTTY http://www.putty.org/ to remotely login to NAS console.
iTunes	Enable music files in the NAS share to be directly accessed by iTunes programs in the network.
P2P	Provides P2P (peer-to-peer) client program. This also supports sancho as its P2P GUI on a Windows computer in the network. Refer to page 96 for more information how to setup P2P.
WEB	Provide web server program. Need to be enabled if photo service is to be used. If NAS will be used as web server, need to copy the html file, example: <i>index.html</i> , file to the share folder (designated in Target Share in Quick Setup) and under WEB subfolder. In web browser, enter <i>http://x.x.x.x/index.html</i> , where is x.x.x.x is the NAS IP. Note that a default index.html file will be created in the WEB subfolder of the designated share folder when the service is enabled. You can delete the default index.html file and copy your own index.html file, or copy a different html filename, for example mytest.html then to open this from web browser, use <i>http://xxx.xxx.xxx.xxx/mytest.html</i>
SNMP	Provides SNMP service, for SNMP monitoring. Click the <i>Edit</i> button under Configuration and setup the Receiver IP.
DHCP	Provides DHCP service, and make actiNAS act as DHCP server. Click the <i>Edit</i> button under Configuration and setup the DHCP options. Refer to Configuration Options in the succeeding pages.
Media Server	Provides NAS DLNA multimedia File Server. Allow NAS to share files to Sony PlayStation3 and XBOX360. When a share folder is set as Media Server library, the share folder is accessible from a DLNA/media client.
Photo	Provide easy to use Photo gallery service. This service requires WEB service enabled. Note that the WEB service will be automatically enabled when Photo service is enabled.
Printer	Provide print server service. It allows a printer installed in the NAS to be shared by computers on the network. Supported model is HP Deskjet F4280 printer. Connect USB cable from printer to USB port of NAS.



NOTE: Do not enable *Public* option on the share folder designated as WEB target share folder.

Service Options

Enable	Allows you to enable/disable the selected service
Name	Shows the service name
Start on Boot	Allows the service to auto-start when the NAS starts
Configuration	This contains basic configuration options (Quick Setup) which can be set by clicking the <i>Edit</i> button
Edit	Click this button to configure the service



NOTE: You cannot enable a selected service if VG does not exist (NASVG is not yet initialized).

Configuration (Quick Setup):

FTP Option

Port	Use this option to set the FTP port number. Default FTP port used by the NAS is 21.
Max. connection	Specify the maximum number of allowed connections. Default is 5.

FTP

Quick Setup

Port

21

Max. connection

5

OK

Cancel

Telnet Option

Port	Use this option to set the Telnet port number. Default Telnet port used by the NAS is 23.
Max. connection	Specify the maximum number of allowed connections. Default is 5.

Telnet

Quick Setup

Port

23

Max. connection

5

OK

Cancel

SSH Option

Enable sftp	Use this option to enable or disable SFTP in SSH. SFTP (Secure FTP) provides secure file transfer in SSH.
-------------	---

SSH

Quick Setup

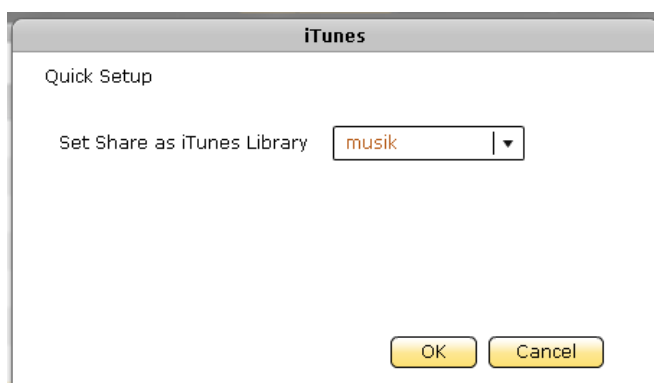
☒ Enable sftp

OK

Cancel

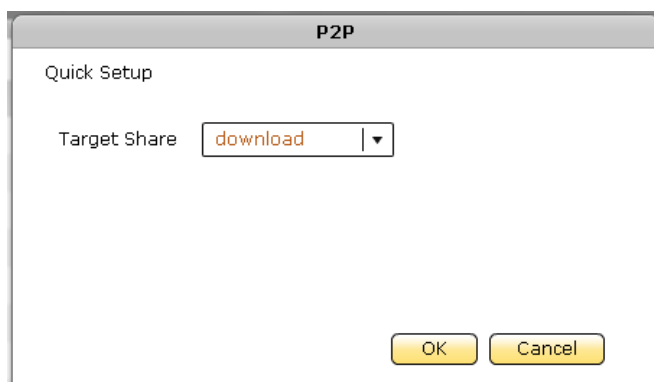
iTunes Option

Set Share as iTunes Library	Select the share folder name that will be used as iTunes library from the list.
-----------------------------	---



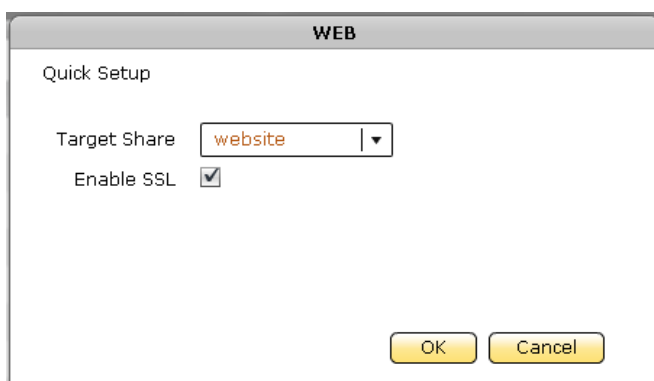
P2P Option

Target Share	Select the share folder name that will be used as download location
--------------	---



WEB Options

Target Share	Select the share folder name that will be used as target location for web server files.
Enable SSL	Tick the box to enable SSL option



DHCP Options

IP range starting from	Means the starting address of range of private IP addresses for DHCP
IP range ending with	Means the ending address of range of private IP addresses for DHCP
Private Net	The network device connected to the private network. For example: eth0
WAN	The network device connected to the Internet / WAN. For example: eth1

The screenshot shows a window titled "DHCP" with a "Quick Setup" section. It contains four input fields: "IP range starting from" with the value "192.168.110.100", "IP range ending with" with the value "192.168.110.150", "Private Net" with a dropdown menu showing "eth0", and "WAN" with a dropdown menu showing "eth1". At the bottom right, there are "OK" and "Cancel" buttons.

Media Server Options

Target Share	Select the share folder where Media Server service will be enabled
Please select LAN device	Select the network device to be used by Media Server service. The LAN device will be the dedicated path for media access.

The screenshot shows a window titled "MediaServer" with a "Quick Setup" section. It contains two input fields: "Target Share" with a dropdown menu showing "share1", and "please select lan device" with a dropdown menu showing "eth0". At the bottom right, there are "OK" and "Cancel" buttons.

Photo Option

Target Share	Select the share folder that will be used as target location of photo/images.
--------------	---

The screenshot shows a window titled "Photo" with a "Quick Setup" section. It contains one input field: "Target Share" with a dropdown menu showing "testsh". At the bottom right, there are "OK" and "Cancel" buttons.

How to Use iTunes Service



NOTE: This section provides a simple example of how to use a NAS share folder as iTunes media folder. For more information about iTunes and how to use it, please visit <http://www.apple.com/itunes/what-is/>.

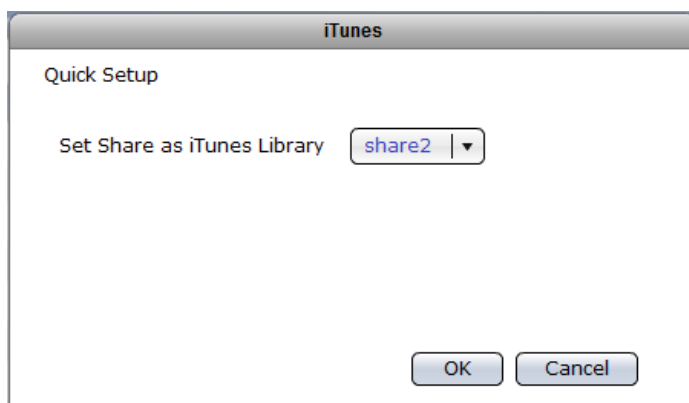
To use a NAS share folder as iTunes media folder:

1. Select the iTunes service in *System*→*Service*.
2. Click *Edit*. Select the share folder that will be used by iTunes service.

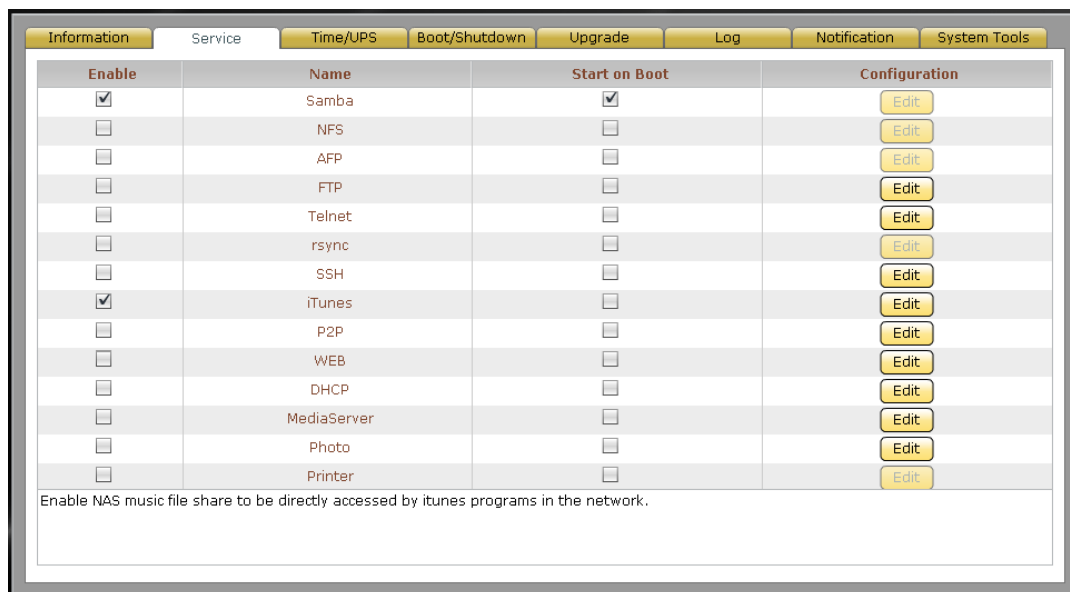
iTunes Option

Set Share as iTunes Library	Select the share folder name that will be used as iTunes library from the list
-----------------------------	--

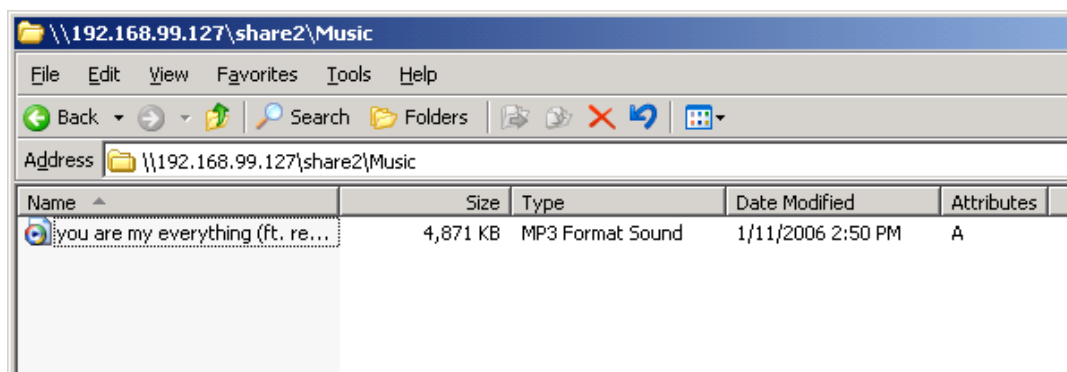
3. Click *OK* to save.



- Click *Enable* option to enable iTunes service.



- Copy some digital audio files to the share folder designated as iTunes Library and under the Music sub-folder. This can be done by accessing the NAS share folder via network (SMB protocol) and copying the audio files.



-
- The screenshot shows the iTunes application window. The top bar includes standard macOS window controls (red, yellow, green buttons), playback controls (previous, play/pause, next, volume slider), the iTunes logo, and a search bar. The left sidebar is divided into sections: 'LIBRARY' (with links to Music, Movies, TV Shows, Podcasts, and Radio) and 'STORE' (with links to iTunes Store, SHARED (Home Sharing, NAS20), GENIUS (Genius), and PLAYLISTS (iTunes DJ, 90's Music, Classical Music)). The main content area is titled 'Music' and contains the text: 'Songs and music videos you add to iTunes appear in Music in your iTunes library. A song, just double-click it.' Below this text are two promotional cards. The first card, 'Download music.', features a green shopping bag icon and text: 'Get new music for your library from the iTunes Store. Preview, buy, and download your favorite music, day or night.' It includes links: 'Watch the tutorial' and 'Shop for music in the iTunes Store'. The second card, 'Import your CDs.', features a CD icon and text: 'With iTunes, any song in your library is only a few clicks away. Import or just specific songs.' It includes a link: 'Watch the tutorial'.

-
- The screenshot shows the iTunes application window. The title bar is labeled "iTunes". The interface includes a top bar with playback controls (play, previous, next, volume) and a search bar. The left sidebar contains a "LIBRARY" section with icons for Music, Movies, TV Shows, Podcasts, and Radio. Below this is a "STORE" section with the iTunes Store icon, and a "SHARED" section with Home Sharing and NAS20. The main area displays a table with columns: Name, Time, Artist, Album, Genre, and Rating. The first row of the table is highlighted in blue and contains the following data: Name: "14 you are my everything (f...", Time: "5:10", Artist: "artist", Album: "17 Golden Best ...", Genre: "genre", and Rating: empty.
- | Name | Time | Artist | Album | Genre | Rating |
|--------------------------------|------|--------|--------------------|-------|--------|
| 14 you are my everything (f... | 5:10 | artist | 17 Golden Best ... | genre | |

How to Use WEB Service

This section provides a simple example of how to setup WEB service and use a NAS share folder as repository of WEB files.



NOTE: Do not enable *Public* option on the share folder designated as WEB target share folder.

To use WEB service:

1. Select the WEB service in *System*→*Service*.
2. Click *Edit*. Configure the Target Share and select a share folder. If needed, enable SSL.

WEB Options

Target Share	Select the share folder name that will be used as target location for web server files.
Enable SSL	Tick the box to enable SSL option

WEB

Quick Setup

Target Share

Enable SSL ☐

OK Cancel

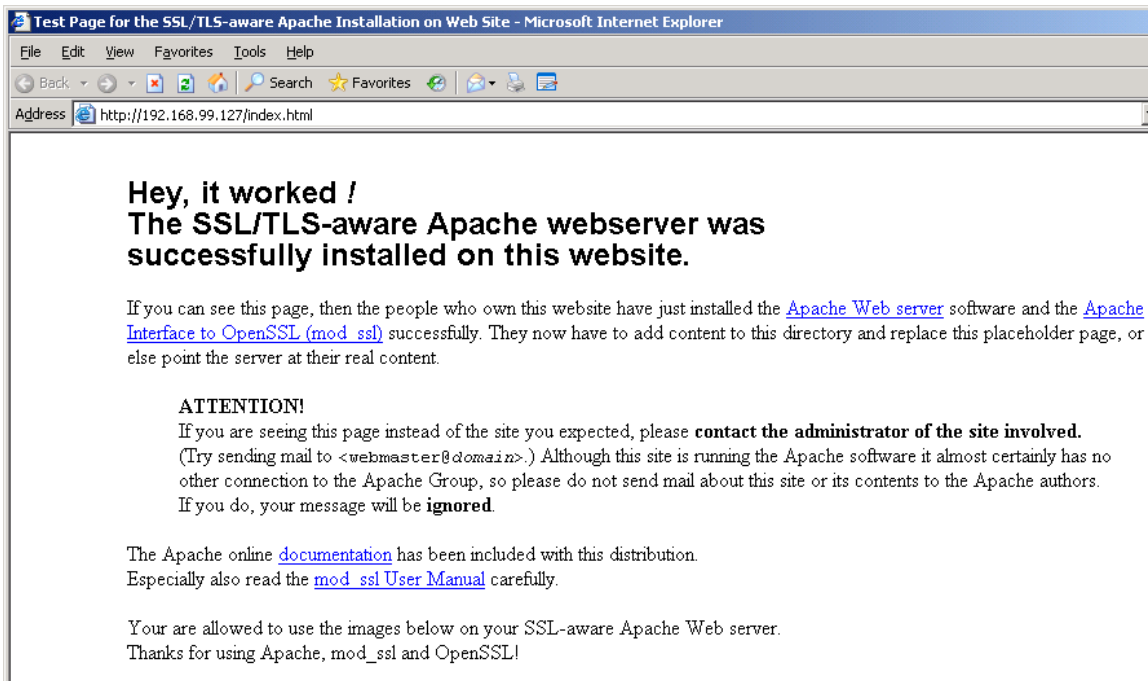
3. Click *OK* to save.

- Click *Enable* option to enable WEB service.

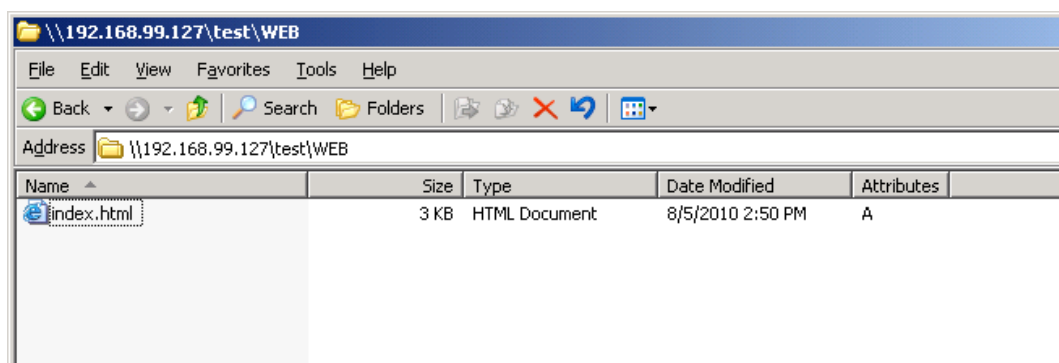
Enable	Name	Start on Boot	Configuration
<input checked="" type="checkbox"/>	Samba	<input checked="" type="checkbox"/>	Edit
<input type="checkbox"/>	NFS	<input type="checkbox"/>	Edit
<input type="checkbox"/>	AFP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	FTP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Telnet	<input type="checkbox"/>	Edit
<input type="checkbox"/>	rsync	<input type="checkbox"/>	Edit
<input type="checkbox"/>	SSH	<input type="checkbox"/>	Edit
<input type="checkbox"/>	iTunes	<input type="checkbox"/>	Edit
<input type="checkbox"/>	P2P	<input type="checkbox"/>	Edit
<input checked="" type="checkbox"/>	WEB	<input type="checkbox"/>	Edit
<input type="checkbox"/>	DHCP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	MediaServer	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Photo	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Printer	<input type="checkbox"/>	Edit

Provide web server program. Need to be enabled if photo service is to be used.

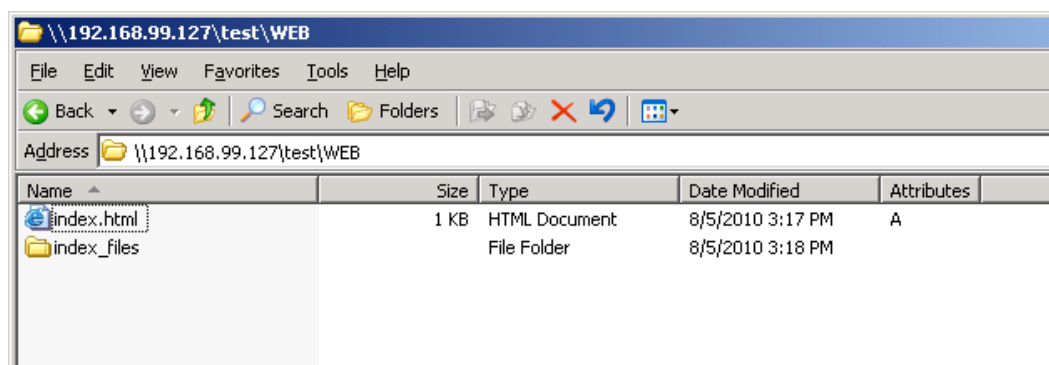
- To test if web service is working, open web browser and enter *http://x.x.x.x/index.html* where x.x.x.x is the NAS IP. The default web page will be displayed.



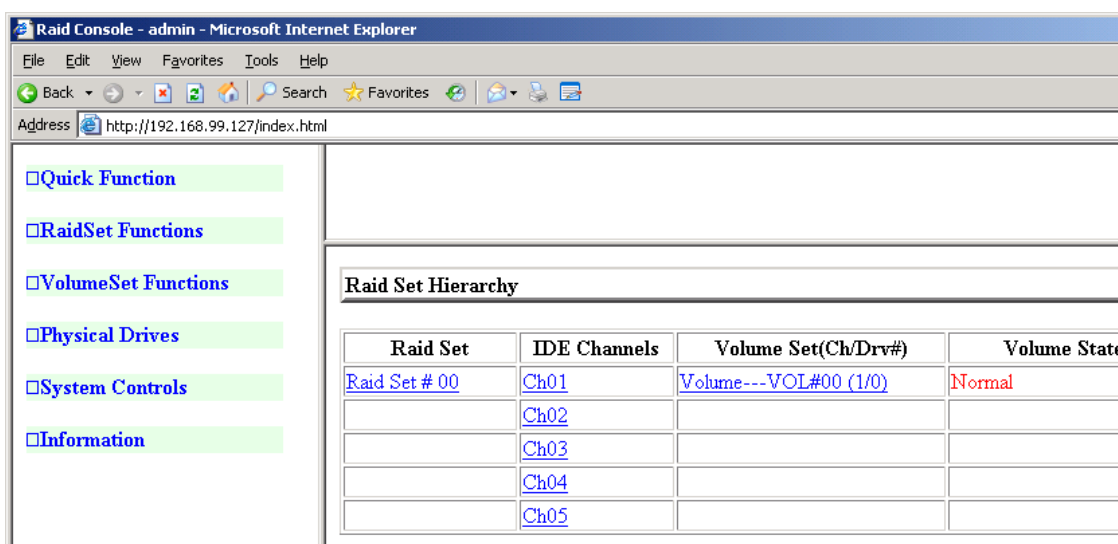
- The default index.html file can be accessed via SMB/CIFS connection, and is saved in the WEB-designated share folder under WEB sub-folder. Delete the default index.html file.



- Copy your own index.html file including the supporting folder/files.



- Open web browser and enter `http://x.x.x.x/index.html` to verify if your web page will be displayed.

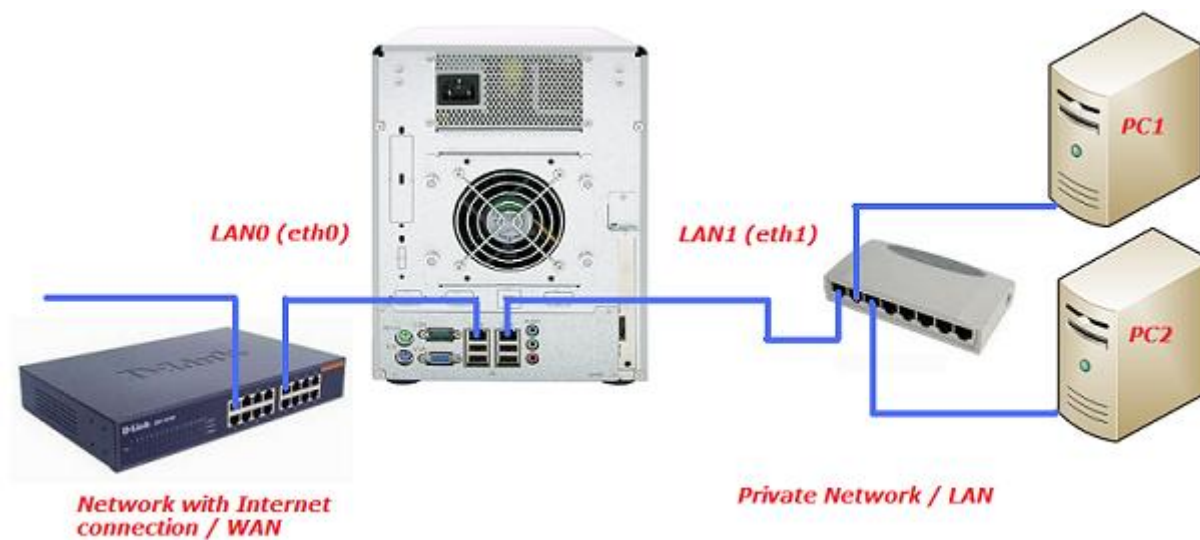


A sample webpage

How to Use DHCP (Internet Gateway) Service

NAS provides DHCP / Internet Gateway function for administrator to easily enable and disable the Internet access for users on a private network. At the same time, the computers can get dynamic IP provided by the NAS which acts as DHCP server.

The diagram below shows an example of how to use the NAS as DHCP server and Internet Gateway.



Before configuring the DHCP service, make sure the network devices eth0 and eth1 are already assigned the proper IP address in Network → Device Configuration.

To use the NAS as a DHCP server / Internet Gateway:

- 1. Select the DHCP service in *System→Service*
- 2. Click *Edit*,configure the following:

IP range starting from	Means the starting address of range of private IP addresses for DHCP
IP range ending with	Means the ending address of range of private IP addresses for DHCP
Private Net	The network device connected to the private network. For example: eth1
WAN	The network device connected to the Internet / WAN. For example: eth0

DHCP

Quick Setup

IP range starting from

192.168.20.101

IP range ending with

192.168.20.150

Private Net

eth1

WAN

eth0

OK

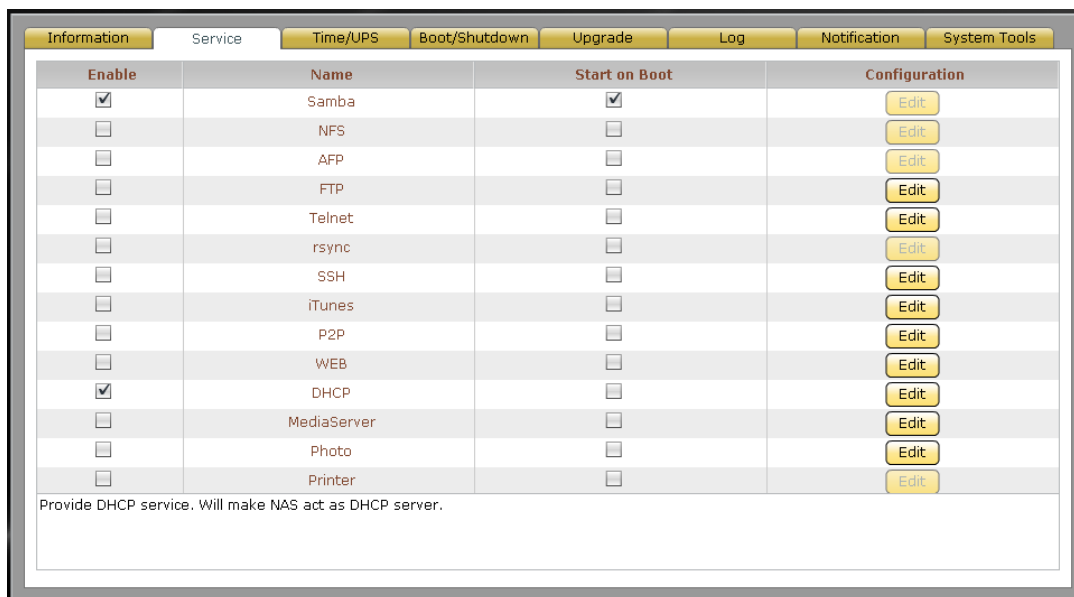
Cancel



NOTE: In this example, eth1 is assigned to Private Net and must have an IP in the same subnet, for example: as 192.168.20.2

- 3. Click *OK*to save.

4. Tick the DHCP service to enable it.



Enable	Name	Start on Boot	Configuration
<input checked="" type="checkbox"/>	Samba	<input checked="" type="checkbox"/>	Edit
<input type="checkbox"/>	NFS	<input type="checkbox"/>	Edit
<input type="checkbox"/>	AFP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	FTP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Telnet	<input type="checkbox"/>	Edit
<input type="checkbox"/>	rsync	<input type="checkbox"/>	Edit
<input type="checkbox"/>	SSH	<input type="checkbox"/>	Edit
<input type="checkbox"/>	iTunes	<input type="checkbox"/>	Edit
<input type="checkbox"/>	P2P	<input type="checkbox"/>	Edit
<input type="checkbox"/>	WEB	<input type="checkbox"/>	Edit
<input checked="" type="checkbox"/>	DHCP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	MediaServer	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Photo	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Printer	<input type="checkbox"/>	Edit

Provide DHCP service. Will make NAS act as DHCP server.

5. Verify if the computers on the Private Network can get dynamic IP when configured with DHCP, and if there is internet access (eth0 should have internet access).

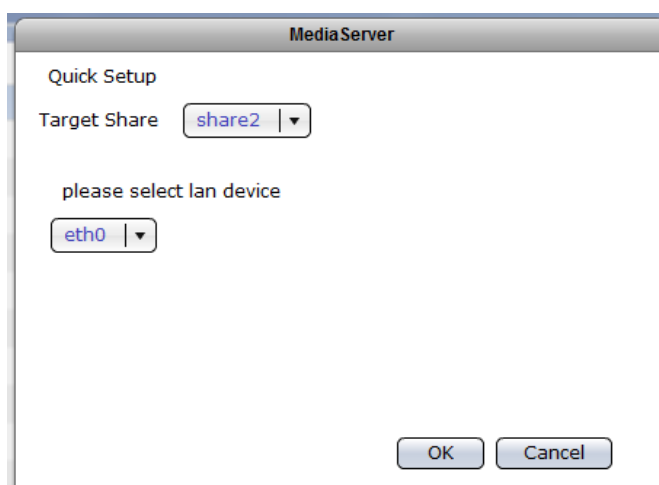
How to Use Media Server Service

This section provides a simple example of how to setup the NAS as DLNA (Digital Living Network Alliance) Media Server, and use a share folder as central repository of media files. DLNA compatible players must be used to access or play the media files.

To use Media Server Service:

1. Select the Media Server service in *System*→*Service*
2. Click *Edit*. Configure the Target Share and LAN device.

Target Share	Select the share folder where Media Server service will be enabled
Please select LAN device	Select the network device to be used by Media Server service. The LAN device will be the dedicated path for media access



MediaServer

Quick Setup

Target Share share2

please select lan device

eth0

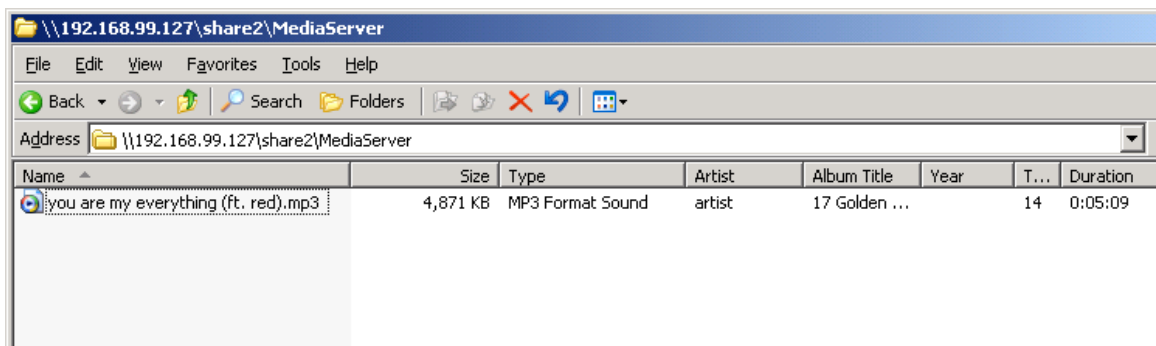
[OK](#) [Cancel](#)

3. Click *OK* to save.
4. Tick the Media Server service to enable it.

Enable	Name	Start on Boot	Configuration
<input checked="" type="checkbox"/>	Samba	<input checked="" type="checkbox"/>	Edit
<input type="checkbox"/>	NFS	<input type="checkbox"/>	Edit
<input type="checkbox"/>	AFP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	FTP	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Telnet	<input type="checkbox"/>	Edit
<input type="checkbox"/>	rsync	<input type="checkbox"/>	Edit
<input type="checkbox"/>	SSH	<input type="checkbox"/>	Edit
<input type="checkbox"/>	iTunes	<input type="checkbox"/>	Edit
<input type="checkbox"/>	P2P	<input type="checkbox"/>	Edit
<input type="checkbox"/>	WEB	<input type="checkbox"/>	Edit
<input type="checkbox"/>	DHCP	<input type="checkbox"/>	Edit
<input checked="" type="checkbox"/>	MediaServer	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Photo	<input type="checkbox"/>	Edit
<input type="checkbox"/>	Printer	<input type="checkbox"/>	Edit

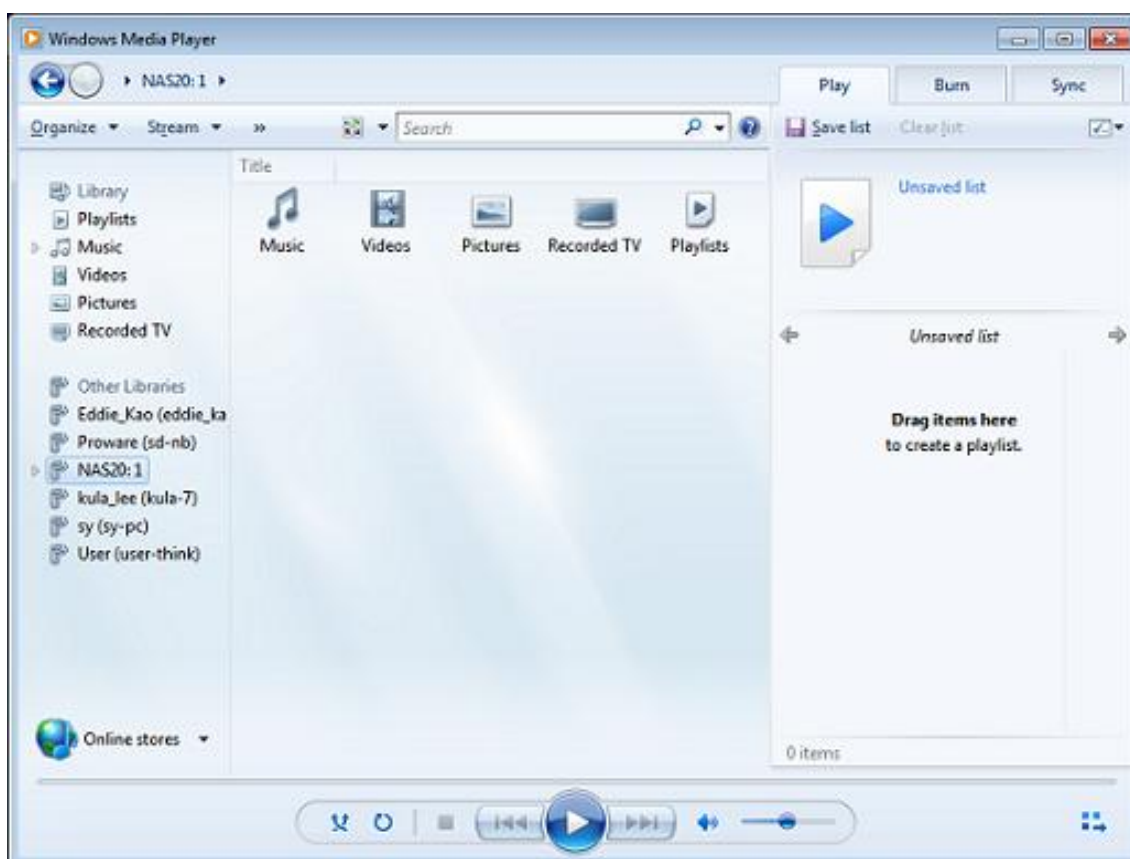
Provide NAS DLNA multimedia File Server. Allow NAS to share files to Sony PlayStation3 and XBOX360.

5. Copy the media file(s) to the share folder designated as Media Server Target Share under the MediaServer sub-folder. This can be done by accessing the NAS share folder via network

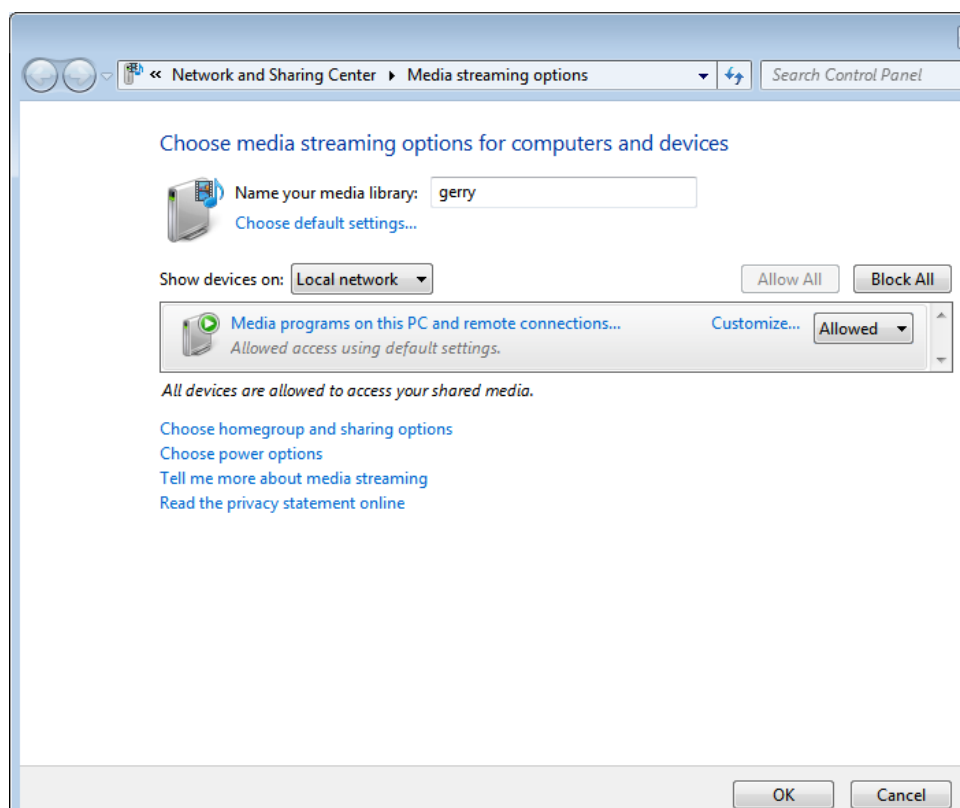
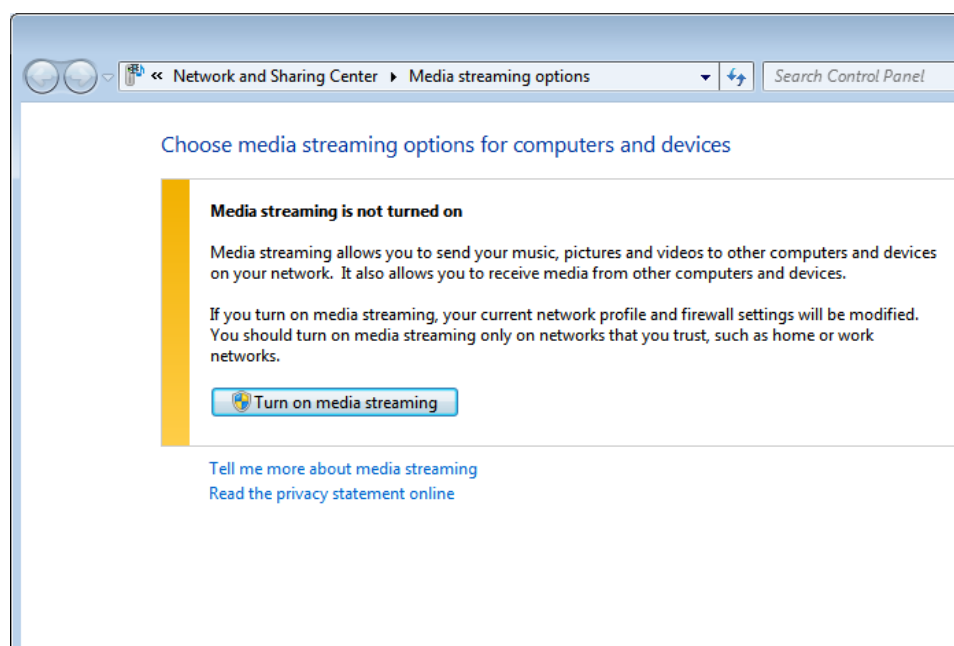


(SMB/CIFS protocol) and copying the media file(s).

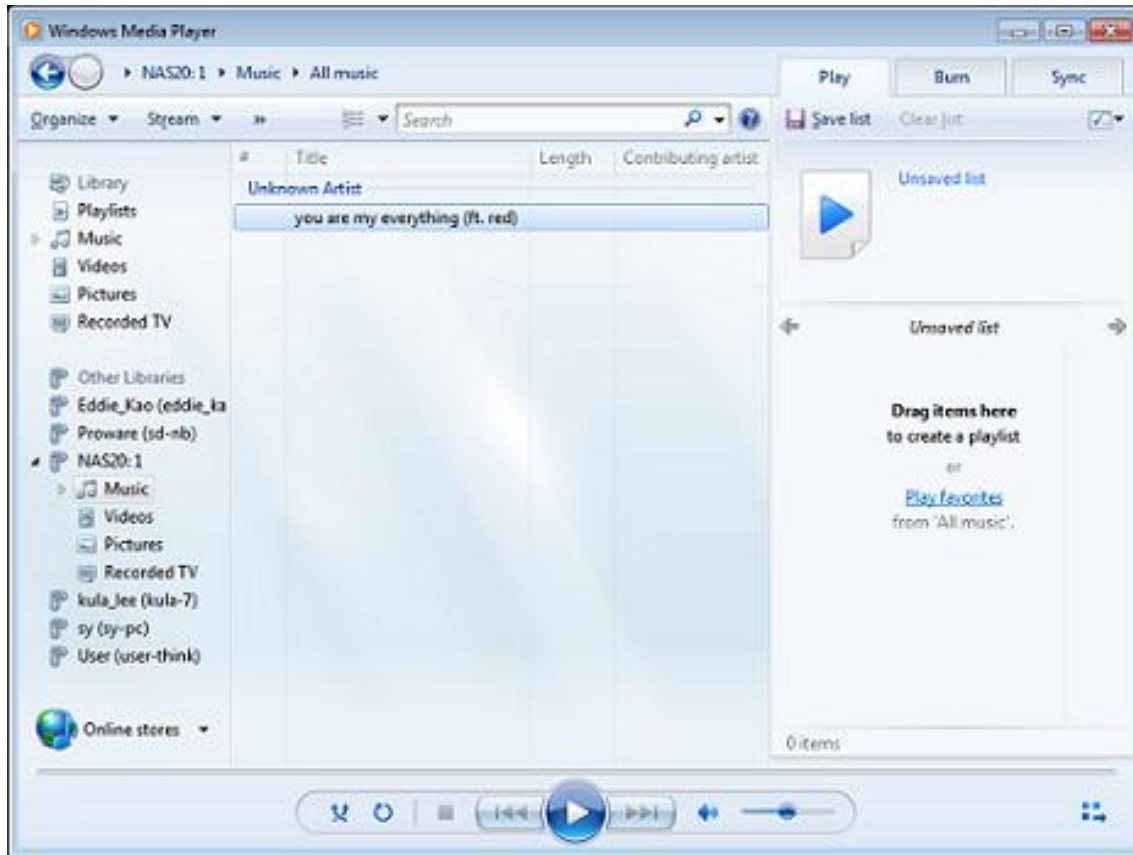
6. Open a DLNA compatible player. For example, Windows Media Player 12 in a PC with Windows 7 OS. The NAS object name should appear in the Other Libraries list.



7. If you don't see the NAS object name in Other Libraries list of Windows Media Player, please check if Media Streaming is turned on. If not, turn it on.



8. Play the media (music).

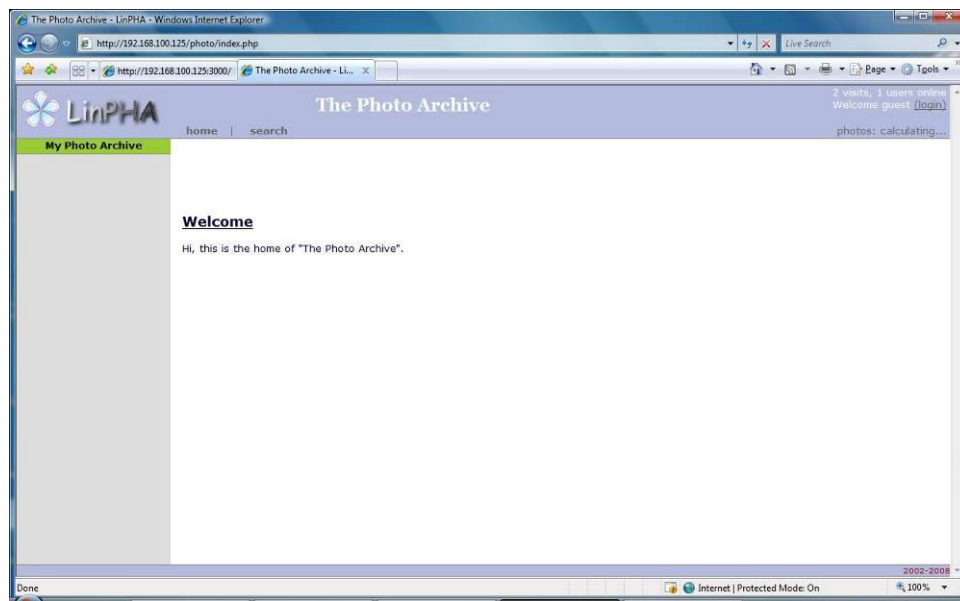


9. For other applications, copy the media files to the designated Media Server share folder under the MediaServer sub-folder, and use other DLNA compatible players to access or connect to NAS Media Server.

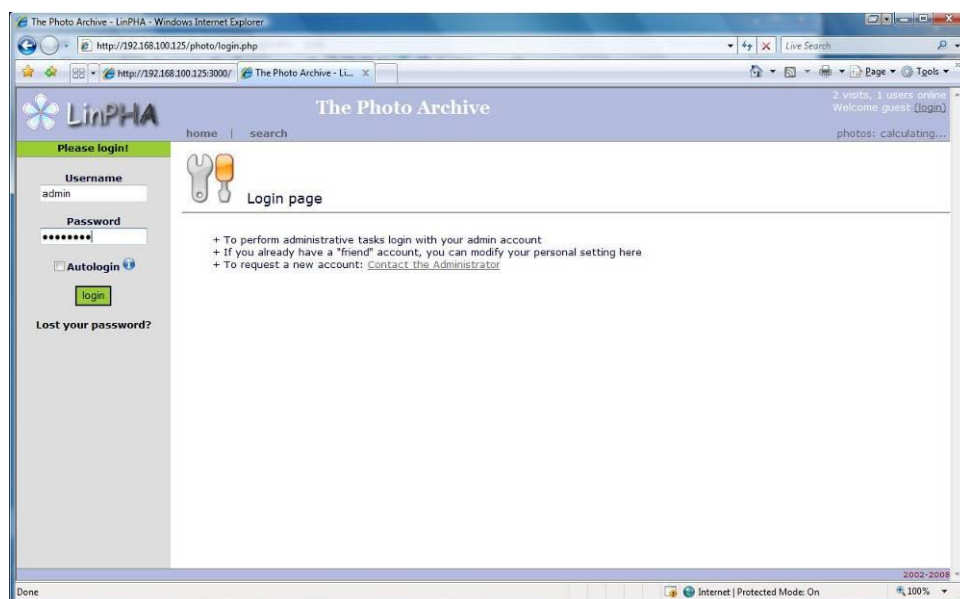
How to Use PhotoService

To use the Photo service:

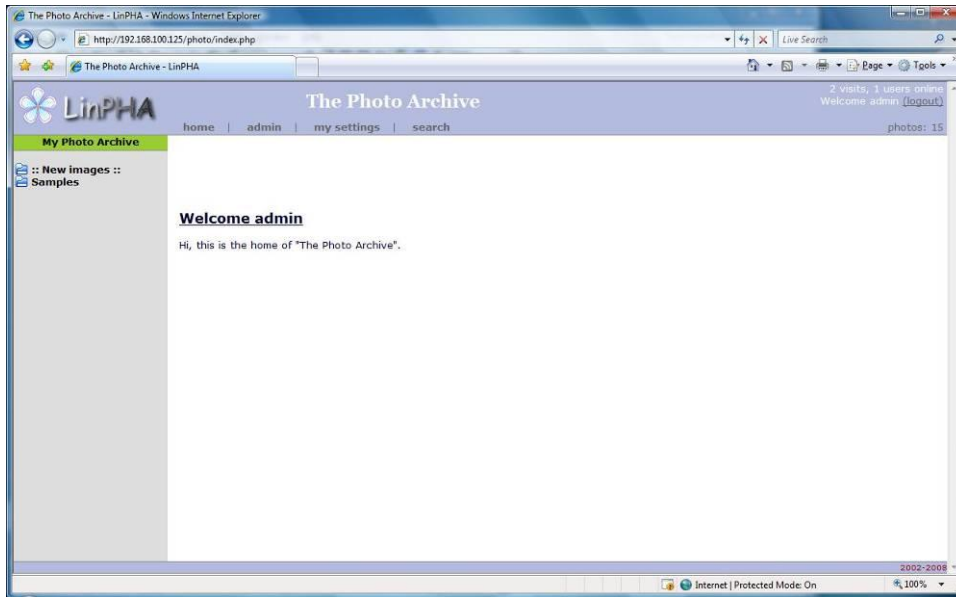
1. Enable the Photo Service, if not yet enabled, by selecting Photo service in System → Service tab. Click *Edit* and select the target share. Enable the Photo service by selecting the *Enable* check box on the left of the service name.
2. Open web browser and type `http://xxx.xxx.xxx.xxx/photo/` where xxx.xxx.xxx.xxx is the NAS IP address. The LinPHA Photo Archive page will be displayed.



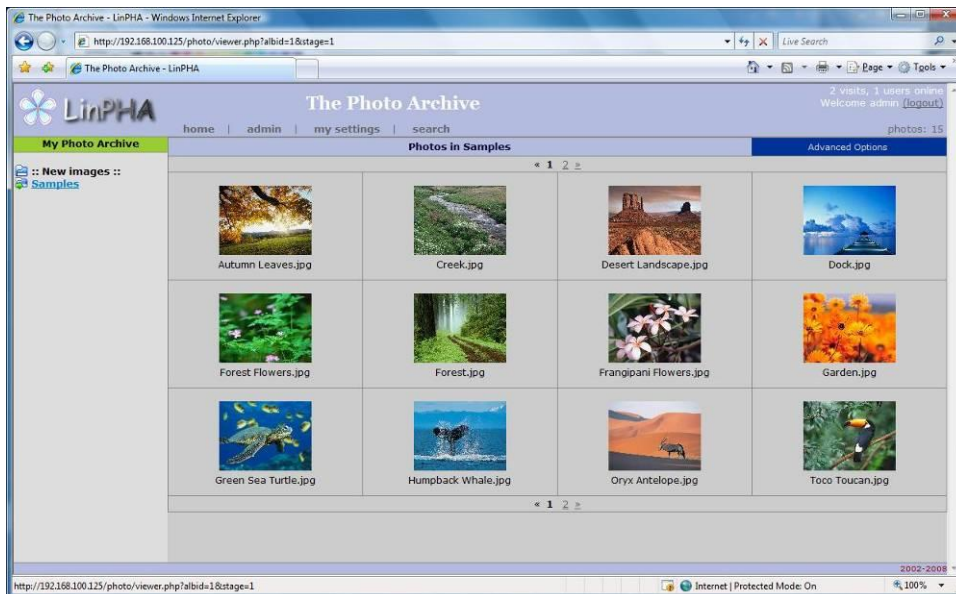
3. Click the *login* link in the upper right side then login as admin and enter admin's password.



4. The Photo Archive home page will be displayed.

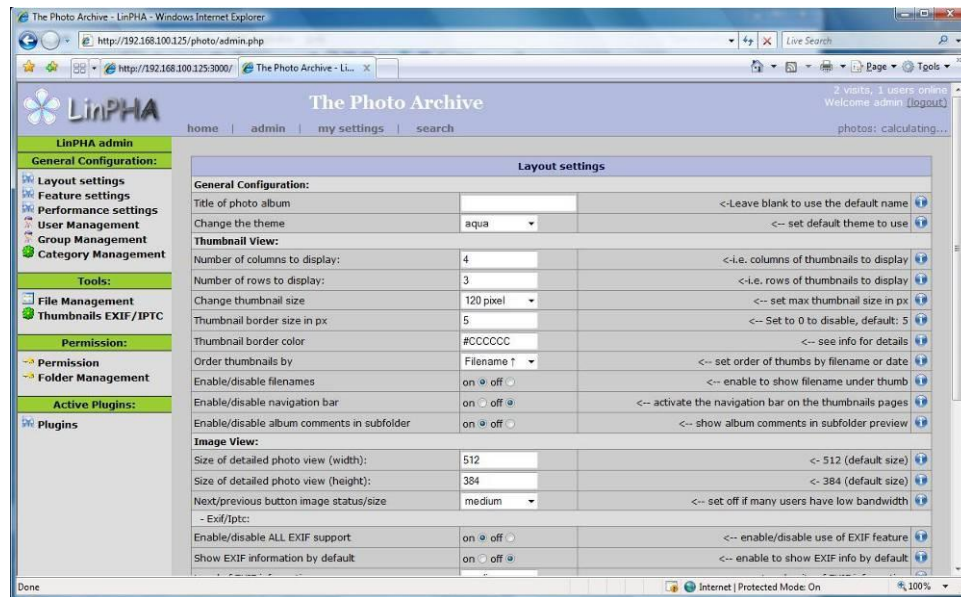


5. To view photos and images, select the folder links under *My Photo Archive*.

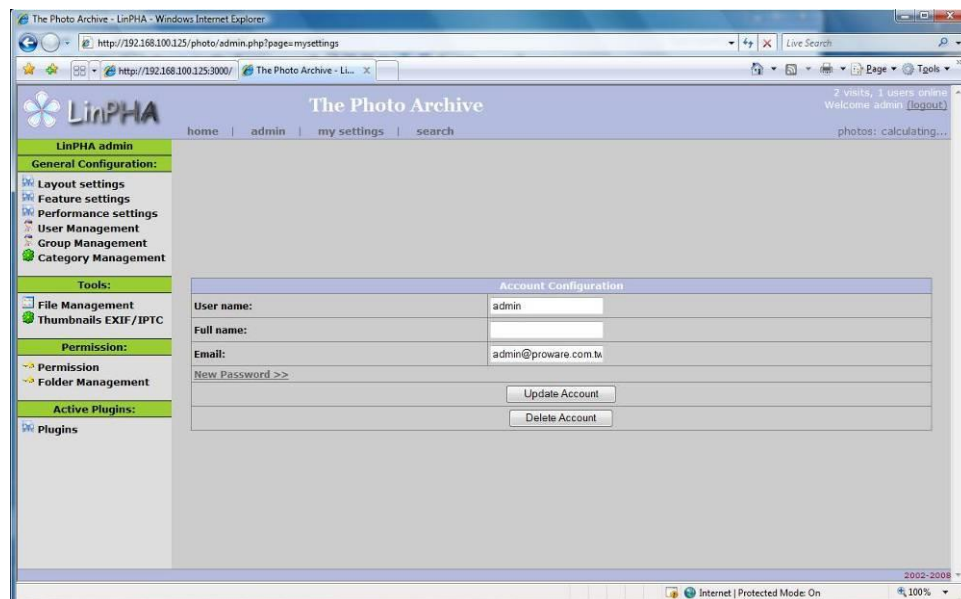


NOTE: The picture files must be saved in the NAS share designated as target location of Photo service and must be inside a subfolder. For example: share1\Photo\Samples, where share1 is the share name, Photo is the folder created by Photo service, and Samples is the subfolder containing photos or images.

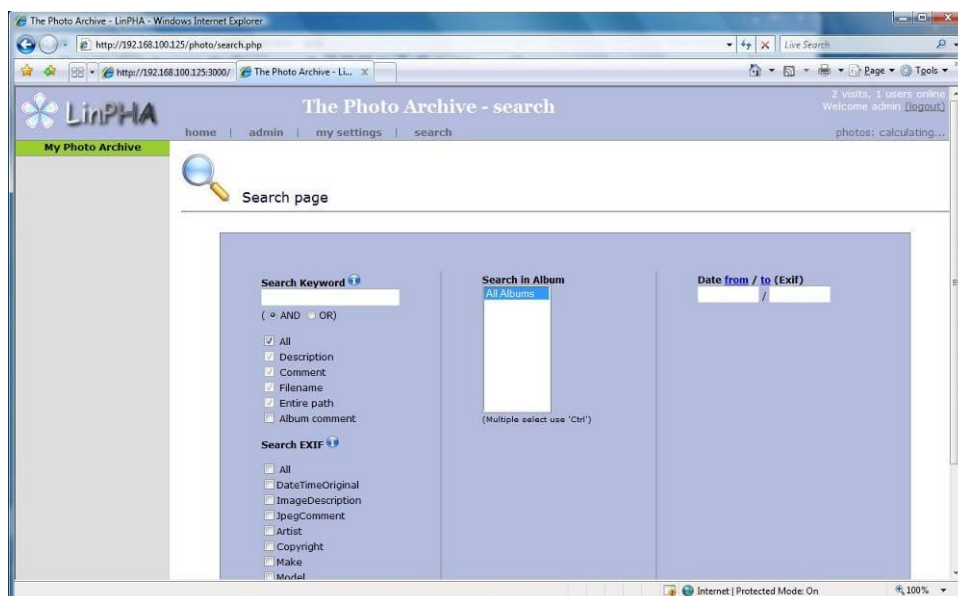
6. Select the *admin* tab to configure settings and options.



7. Select *my settings* to configure account details.



8. Select *search* tab for search options.



9. Click the *logout* link to logout.

Time/UPS

The system time, date, time zone, NTP option, and UPS can be configured here.

InformationServiceTime/UPSBoot/ShutdownUpgradeLogNotificationSystem Tools

Time

Time12:22

Date11/15/2010

Apply

Time Zone

GMT+01:00Europe/Berlin

Apply

NTP Auto Update

time.nist.gov

Add

Remove

Apply

Update Now

192.43.244.18

time.nist.gov

UPS

Enable

Serial Portcom1

ServiceUPS

UPS VendorN/A

Cable Modelsimple

Shutdown Delay(Min)0

Apply

Reset

Time

To set Time, press up/down arrow in the hour and seconds boxes. To set Date, click the calendar icon on the right side and select the preferred date. To set Time Zone, click the down arrow and select the preferred time zone.

Apply

Use this button to save the changes made.

NTP Option

To select the NTP server, click the down arrow and select the preferred NTP server.

To immediately synchronize the system time from NTP server, press the *Update Now* button. To enable automatic update of system time from NTP server, check the *Auto Update* option.

NTP Auto Update	Check this option to enable automatic update of system time from NTP server.
Apply	Use this button to save the changes made.
Update Now	Use this button to manually update the system time and synchronize from NTP server.
Add	Use this button to add an NTP server. Enter the NTP server IP address in the box provided then click this button.
Remove	Use this button to remove an NTP server. Select the NTP server from the list then click this button.

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/ actiNAS Manager · System

UPS

Use the settings here to configure the UPS.

Enable	Use the option to enable or disable UPS support for serial port.
Serial Port	Use this option to select serial port option (com1 or USB).
Service	Use this option to select the type of UPS, whether UPS (smart) or Dumb UPS.
UPS Vendor	Use this option to select the UPS vendor. Currently, only APC and Beam-Tech UPS models are supported.
Cable Model	Use this option to select the UPS cable type. Options are: simple, smart, ether, and usb.
Shutdown Delay (Min)	Use this option to set the delay time in minutes before UPS shutdown. Delay Time has expired.
Reset	Use this button to undo or clear any changes made.
Apply	Use this button to save the changes made.

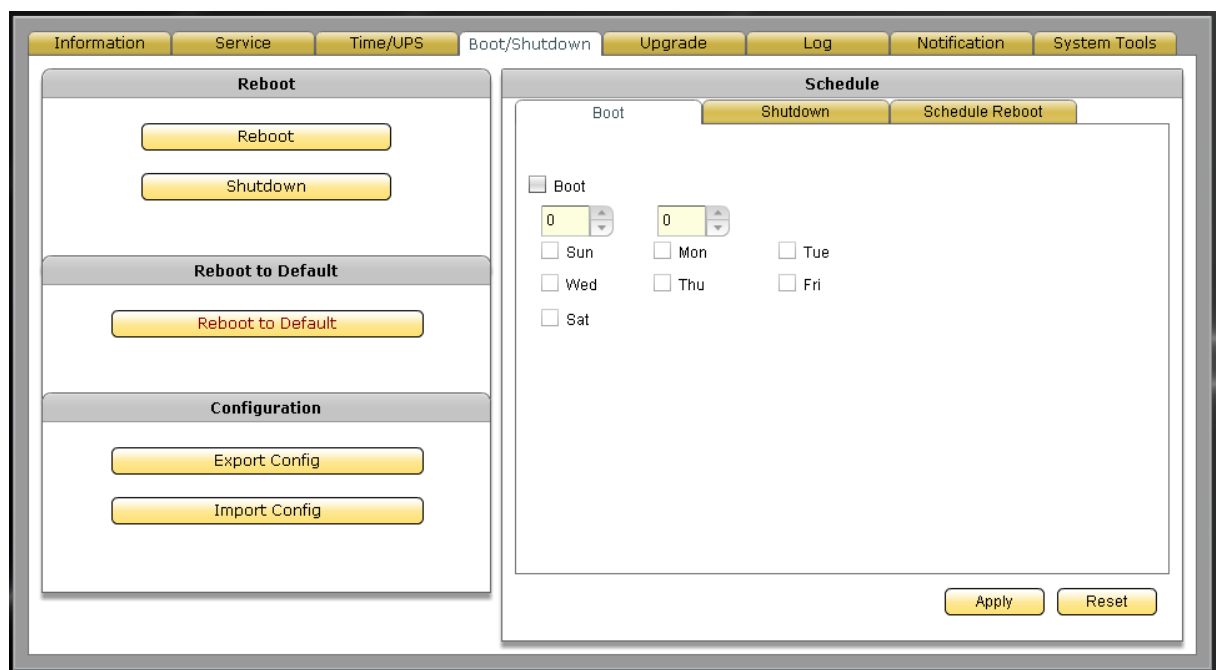


Note: In NAS models with com2 serial port, com2 is reserved for SES use.

Note: Users/ customers must use only the supported UPS vendor models: APC and Beam-Tech. If others UPS models are used, there is no guarantee that the NAS will be able to communicate to the UPS. The basic UPS function (to provide uninterrupted power supply to the NAS) will probably work but the shutdown delay might not work using the UPS cable from the “unsupported” UPS vendor model. Other UPS vendor models will be added to the approved model in the future,

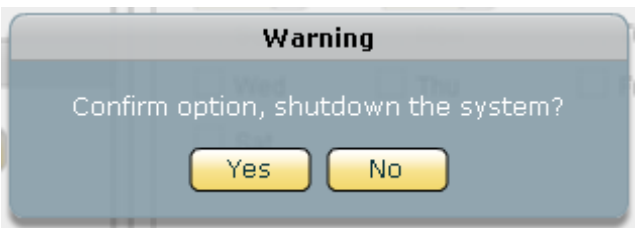
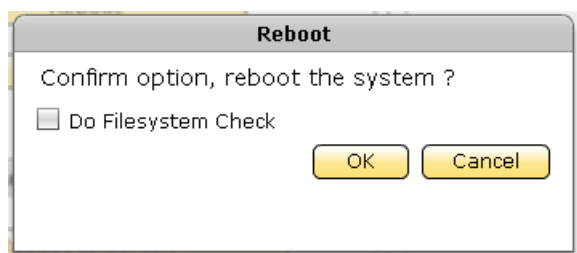
Note: For most cases, it is recommended to use as a value of 1 instead of 0 (zero) in shutdown delay. When set to 0, the timer is disabled and the UPS will shutdown the NAS depending on the battery level and / or remaining runtime, or when the UPS battery is exhausted. However, some types of UPS cables, which do not support low battery detection, might not work when shutdown delay is set to 0

The NAS can be restarted or shutdown manually or based on schedule.



Reboot

Reboot	Use the button to immediately reboot the NAS. If needed, you can also enable <i>Do Filesystem Check</i> option to perform filesystem check after reboot.
Shutdown	Use this button to immediately shutdown the NAS. When a warning message is displayed, select <i>Yes</i> to shutdown the system.



Reboot to Default

Reboot to Default Use this button to reboot the NAS and restore to default configuration.



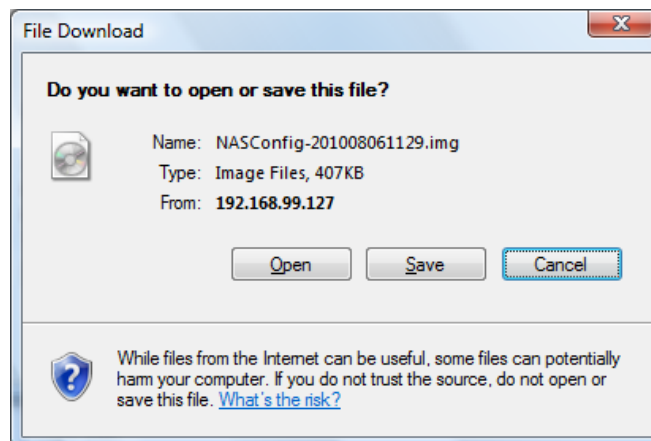
WARNING! Use the *Reboot to Default* function with care. Resetting the NAS to default configuration will delete the current NAS settings and erase all existing data.



NOTE: If you have made a Data Backup to Local Disk (or external eSATA disk), shutdown the NAS and remove the Local Disk (or eSATA disk) with Data Backup, then power on the NAS and do *Reboot to Default*. If the Local Disk with Data Backup is in the NAS when *Reboot to Default* is executed, the data on the Local Disk will also be cleared.

Configuration

Export Config Use this button to export the NAS system configuration and save as image file, which can be used later for restoration. After clicking *Export Config*, click *Save* to save the configuration image file.



NOTE: Your web browser might be configured to block pop-ups. You need to allow pop-ups (temporarily) to be able to download and save the configuration file.

Configuration

Import Config

Use this button to import and restore a previously saved (exported) NAS system configuration.

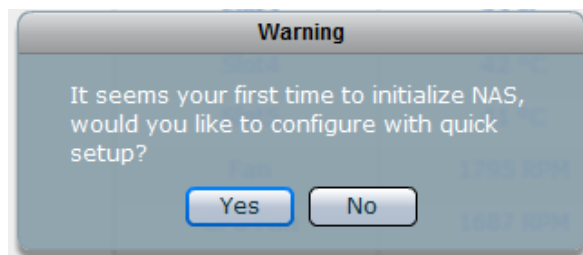


NOTE: Import Config function requires that the NAS be reset to factory default setting before a saved configuration file can be restored.

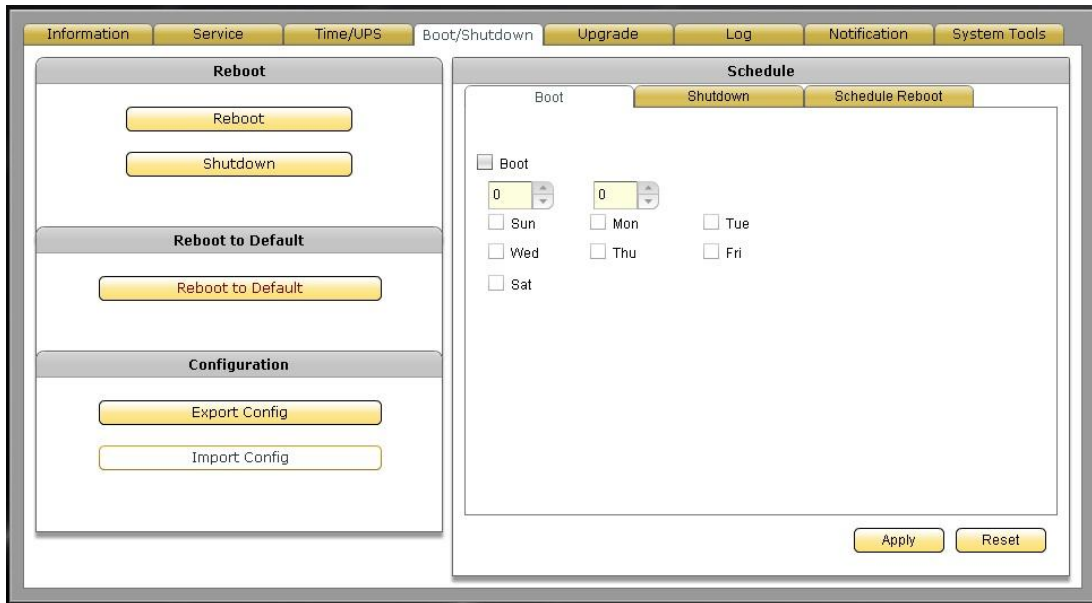
NOTE: If you have made a Data Backup to Local Disk (or external eSATA disk), shutdown the NAS and remove the Local Disk (or eSATA disk) with Data Backup, then power on the NAS and do *Reboot to Default*. If the Local Disk with Data Backup is in the NAS when *Reboot to Default* is executed, the data on the Local Disk will also be cleared.

To import configuration:

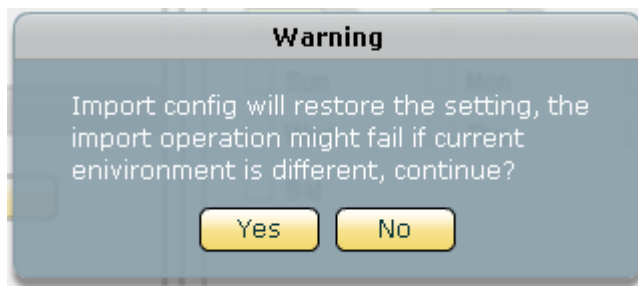
1. Use *Reboot to Default* to reset the NAS to factory default settings.
2. After reset to default, login to NAS GUI. You may need to verify the assigned IP of the NAS.
3. When the warning message below appears, select *No*.



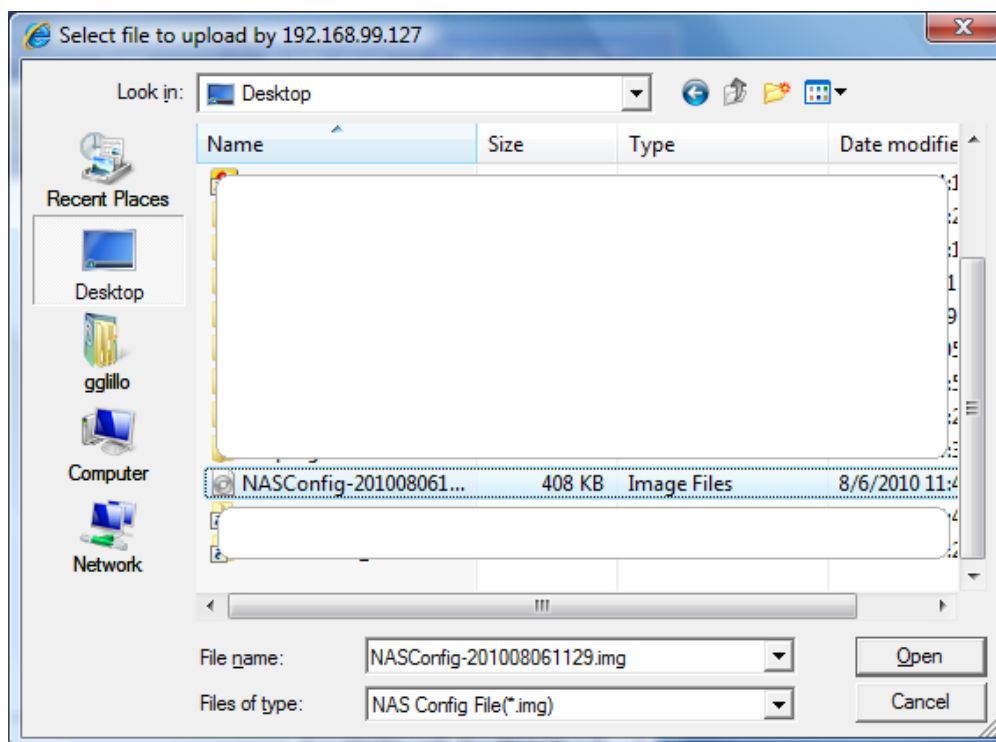
4. Select *System*→*Boot/Shutdown*→*Import Config*.



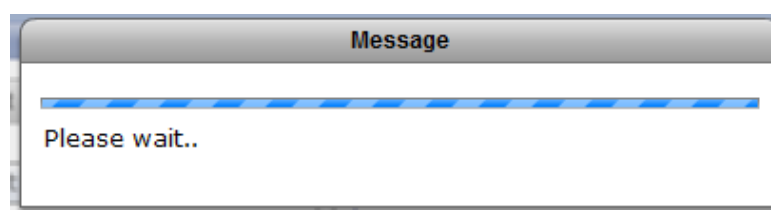
5. A warning message will be displayed. Make sure the NAS where configuration will be imported has the same environment as the NAS configuration that will be restored, such as same number of disk drives, same NAS firmware version, etc. Click *Yes* to continue.



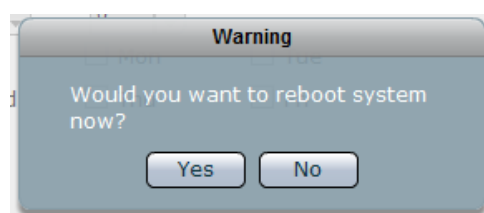
6. Select the NAS configuration file to be imported. Click *Open*.



7. A process status message will be displayed.



8. A reboot warning message will be displayed. Select *Yes* to reboot.



9. The imported configuration file will be restored to the NAS. Login to NAS GUI.

Schedule

Use the options here to boot, shutdown, or reboot the NAS based on schedule.

Boot

Boot Use the option to enable or disable scheduled boot of NAS. Set the time (hour and minutes) in the up/down arrow boxes. Select the day or days when the scheduled boot will happen.

Shutdown

Schedule

Boot

Shutdown

Schedule Reboot

Boot

0

0

Sun

Mon

Tue

Wed

Thu

Fri

Sat

Apply

Reset

Shutdown Use this option to enable or disable scheduled shutdown of NAS. Set the time (hour and minutes) in the up/down arrow boxes. Select the day or days when the scheduled shutdown will happen

Schedule

Boot

Shutdown

Schedule Reboot

Shutdown

0

0

Sun

Mon

Tue

Wed

Thu

Fri

Sat

Apply

Reset

Schedule Reboot

Schedule Reboot Use this option to enable or disable scheduled reboot of NAS. Set the time (hour and minutes) in the up/down arrow boxes. Select the day or days when the scheduled reboot will happen.

Schedule

Boot

Shutdown

Schedule Reboot

☐ Schedule Reboot

0

0

☐ Sun

☐ Mon

☐ Tue

☐ Wed

☐ Thu

☐ Fri

☐ Sat

Apply

Reset

Apply Use this button to save the changes made.

Reset Use this button to undo or clear any changes made.

Upgrade

The NAS firmware can be upgraded remotely from FTP server or manually from local directory.

Remote Upgrade

Remote

To upgrade remotely, press the *Check Updates* button. The available NAS firmware version will be listed. Select the firmware version then click the *Upgrade* button. The NAS firmware version will be updated. NAS will restart to load the updates.

The screenshot shows the 'Upgrade' tab in the actiNAS Manager. The interface includes a top navigation bar with tabs: Information, Service, Time/UPS, Boot/Shutdown, Upgrade (selected), Log, Notification, and System Tools. The main content area is titled 'Upgrade' and contains the following elements:

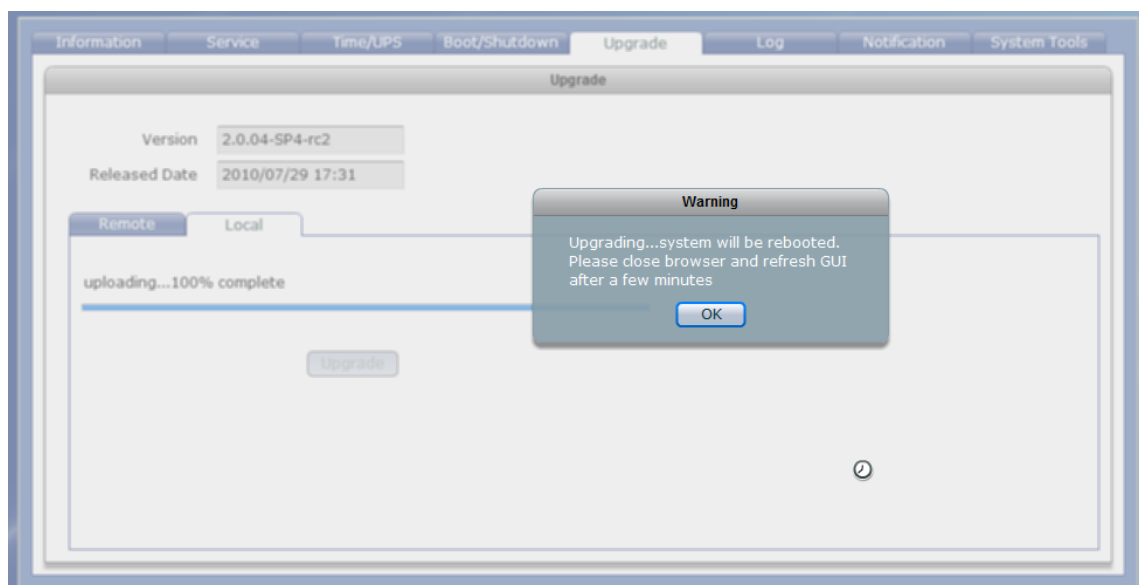
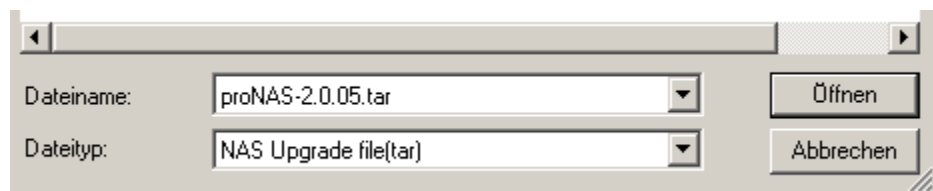
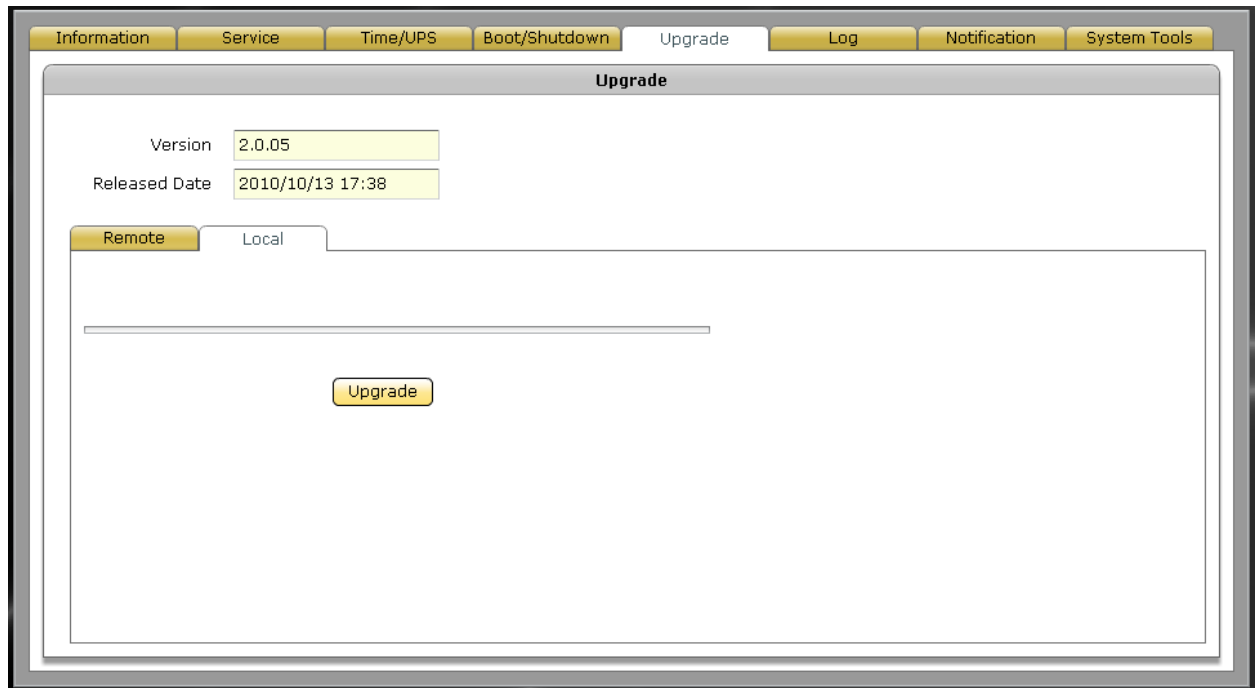
- Version: 2.0.05
- Released Date: 2010/10/13 17:38
- Remote and Local tabs, with 'Local' currently selected.
- Upgrade Site: ftp://
- A table with two columns: Version and Released Date. The table is currently empty.
- Check Updates and Upgrade buttons at the bottom right.

Version	Released Date

Local Upgrade

Local

To upgrade locally, the NAS firmware must have been downloaded from vendor's FTP site and saved into local directory. Click the *Upgrade* button, select the NAS upgrade file (tar file), and click Open. The NAS firmware version will be updated. NAS will restart to load the updates.



Log

NAS logs can be viewed in this tab.

Information	Service	Time/UPS	Boot/Shutdown	Upgrade	Log	Notification	System Tools
Date	Type	Level	Message				
2010/10/29 09:46:44	System	INFO	NAS sevice stopped.				
2010/10/29 09:46:49	System	INFO	NAS Reboot.				
2010/10/29 09:48:02	System	INFO	NAS Boot.				
2010/10/29 09:48:13	System	INFO	NAS sevice started.				
2010/10/29 09:48:19	System	INFO	Service smb started.				
2010/10/29 10:09:38	Share	INFO	Share Deleted: waste				
2010/10/29 10:09:49	Storage	INFO	Remove Volume Successfully: vol4				
2010/10/29 10:10:43	Share	INFO	Share Deleted: test2				
2010/10/29 10:10:47	Storage	INFO	Remove Volume Successfully: test1				
2010/10/29 10:11:14	Storage	INFO	Remove Volume Successfully: vol2				
2010/10/29 10:13:15	Share	INFO	Share Deleted: restore				
2010/10/29 10:17:34	System	INFO	Reboot system				
2010/10/29 10:18:03	System	INFO	NAS sevice stopped.				
2010/10/29 10:18:07	System	INFO	NAS Reboot.				
2010/10/29 10:19:19	System	INFO	NAS Boot.				
2010/10/29 10:19:29	System	INFO	NAS sevice started.				
2010/10/29 10:19:35	System	INFO	Service smb started.				
Date	All	Type	All	Level	All	Download system logs	Refresh

Log Options

Date	Shows the date and time when the particular log happened. Use the down arrow to select the day or days that will be used to display the log. Options are: Today, Past 7 Days, Past 14 Days, Past 30 Days, and All.
Type	Shows the type of log. Use the down arrow to select the type of log to display. Options are: All, System, Storage, Share, and Account.
Level	Shows the log level. Use the down arrow to select the level of log to display. Options are: All, DEBUG, INFO, WARN, and ERROR.
Message	Shows information about the log.
Download system logs	Use this button to save all actiNAS logs to a log file in local directory. The log file will be given .tar extension name. Rename the log file if needed.
Refresh	Use this button to update the log information displayed.

Notification

Event Option

Use this function to enable event notification via email.

InformationServiceTime/UPSBoot/ShutdownUpgradeLogNotificationSystem Tools

Event Option

Enable	Event
<input type="checkbox"/>	Volume Full
<input type="checkbox"/>	Disk Fail
<input type="checkbox"/>	RAID Fail
<input type="checkbox"/>	Temperature Fail
<input type="checkbox"/>	RDX Event
<input checked="" type="checkbox"/>	Fan Fail
<input type="checkbox"/>	XFS Internal Error

E-Mail Setting

Recipients

E-Mail Setting

SMTP Server

Port25

Accountadmin

Password

Sender AddressactiCube@nas.com

Apply and test

Apply

Reset

Event Option

Enable	Check the event(s) that will be included in list of events that will be monitored. Once the selected event happened, the email recipient(s) will receive a notification mail.
--------	---

Event List:

- Volume Full
- Disk Fail
- RAID Fail
- Temperature Fail
- RDX Event
- Fan Fail
- XFS Internal Error

Email Setting

Email Setting Options

SMTP Server	Use this option to enter the SMTP server IP address.
Port	Use this option to set the SMTP port number. Default is port 25.
Account	Use this option to enter a valid email account in the SMTP server.
Password	Use this option to enter the password of the email account.
Sender Address	Use this option to specify the sender's email address.

Recipients Options

Add	Use this button to add a recipient email address in the list of recipients. Type in the text box the recipient email address.
Remove	Use this button to remove an email address from the list of recipients. Select first the email address then click <i>Remove</i> .

Apply and test	Use this button to save the changes made and send test mail to the e-mail recipient(s).
Apply	Use this button to save the changes made.
Reset	Use this button to undo or clear any changes made.

Event Option	
Enable	Event
<input type="checkbox"/>	Volume Full
<input type="checkbox"/>	Disk Fail
<input type="checkbox"/>	RAID Fail
<input type="checkbox"/>	Temperature Fail
<input type="checkbox"/>	RDX Event
<input checked="" type="checkbox"/>	Fan Fail
<input type="checkbox"/>	XFS Internal Error
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

E-Mail Setting

E-Mail Setting

Recipients

Add

Remove

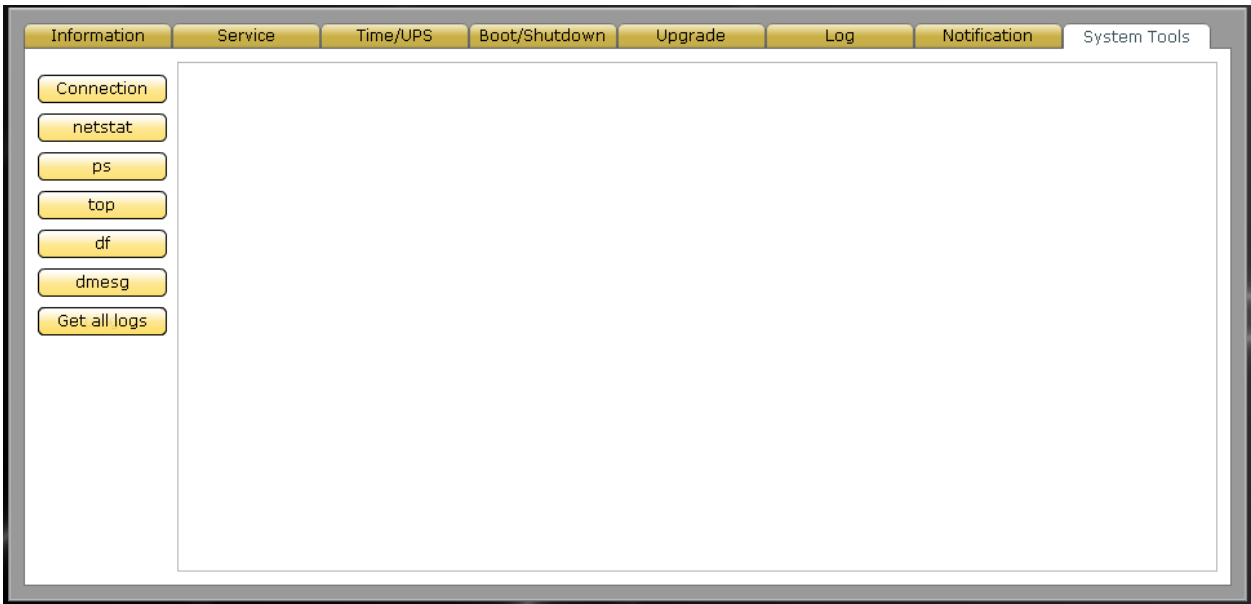
Apply and test

Apply

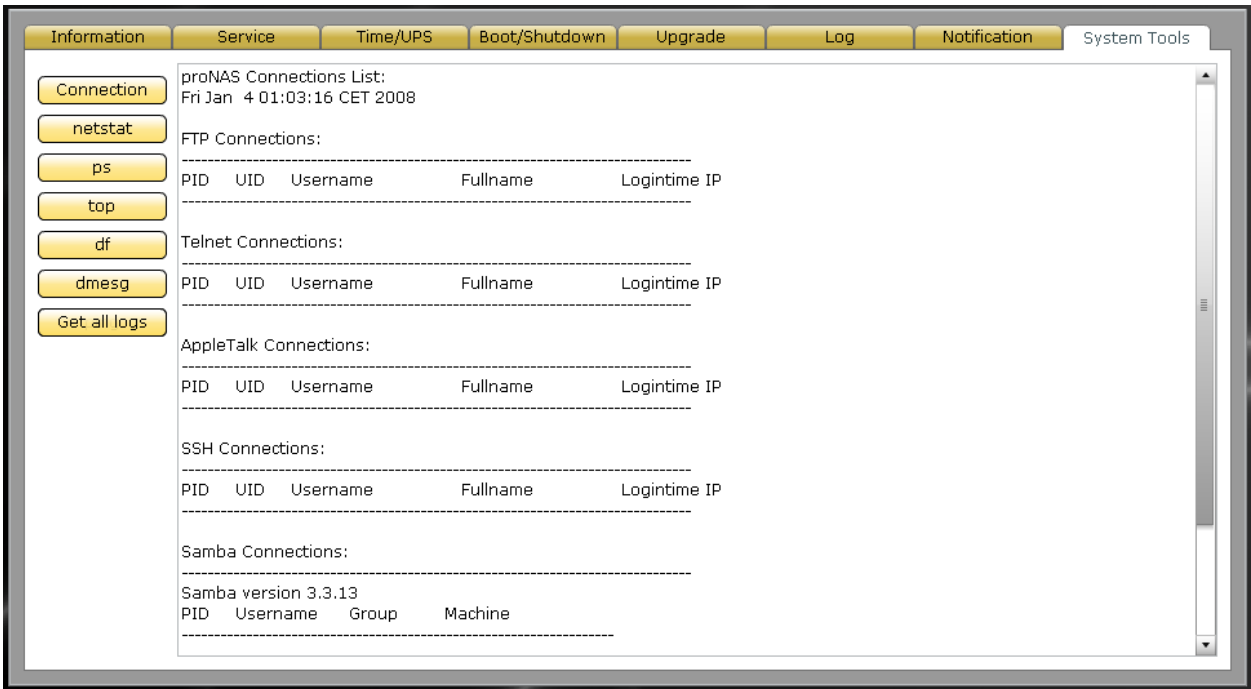
Reset

System Tools

NAS provides various system tools which help the administrator monitor the system.



Connection Use this button to display information about client active connections.



The screenshot shows the actiNAS Manager interface with the 'netstat' button selected. The main window displays the following information:

Active Internet connections (w/o servers)

Proto	Recv-Q	Send-Q	Local Address	Foreign Address	State
tcp	0	0	actiCube:3000	acd-pc1.actidata.:53688	ESTABLISHED
tcp	0	0	actiCube:3000	acd-pc1.actidata.:53682	ESTABLISHED
tcp	0	0	actiCube:3000	acd-pc1.actidata.:53683	ESTABLISHED
tcp	0	0	actiCube:3000	acd-pc1.actidata.:53680	ESTABLISHED
tcp	0	0	actiCube:3000	acd-pc1.actidata.:53770	ESTABLISHED

Active UNIX domain sockets (w/o servers)

Proto	RefCnt	Flags	Type	State	I-Node	Path
unix	6	[]	DGRAM		4588	/dev/log
unix	2	[]	DGRAM		1424010	
unix	2	[]	DGRAM		1381135	
unix	2	[]	DGRAM		4667	
unix	2	[]	DGRAM		4596	

The screenshot shows the actiNAS Manager interface with the 'ps' button selected. The main window displays a list of running processes:

PID	TTY	STAT	TIME	COMMAND
1 ?		Ss	0:01	init [2]
2 ?		S	0:00	[kthreadd]
3 ?		S	0:00	[ksoftirqd/0]
4 ?		S	0:00	[migration/0]
5 ?		S	0:00	[events/0]
6 ?		S	0:00	[khelper]
11 ?		S	0:00	[asynch/mgr]
153 ?		S	0:00	[sync_supers]
155 ?		S	0:00	[bdi-default]
156 ?		S	0:00	[kblockd/0]
157 ?		S	0:00	[kacpid]
158 ?		S	0:00	[kacpi_notify]
159 ?		S	0:00	[kacpi_hotplug]
258 ?		S	0:00	[ata_aux]
259 ?		S	0:00	[ata_sff/0]
264 ?		S	0:00	[khudb]
267 ?		S	0:00	[kseriod]
370 ?		S	0:00	[khpsbpkt]
377 ?		S	0:00	[rpciod/0]
397 ?		S	0:00	[kswapd0]
398 ?		S	0:00	[aio/0]
399 ?		S	0:00	[nfsiod]
400 ?		S<	0:00	[kslowd000]
401 ?		S<	0:00	[kslowd001]
402 ?		S	0:00	[xfs_mru_cache]
403 ?		S	0:00	[xfslogd/0]
404 ?		S	0:00	[xfsdatad/0]

Information Service Time/UPS Boot/Shutdown Upgrade Log Notification System Tools

Connection netstat ps top df dmesg Get all logs

top - 01:12:21 up 4:41, 0 users, load average: 0.23, 0.22, 0.19
 Tasks: 120 total, 1 running, 119 sleeping, 0 stopped, 0 zombie
 Cpu(s): 7.6%us, 10.2%sy, 0.0%ni, 81.7%id, 0.5%wa, 0.0%hi, 0.0%si, 0.0%st
 Mem: 1025212k total, 487268k used, 537944k free, 13304k buffers
 Swap: 1048572k total, 0k used, 1048572k free, 382836k cached

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1	root	20	0	1784	576	496	S	0.0	0.1	0:01.18	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.44	ksoftirqd/0
4	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
5	root	20	0	0	0	0	S	0.0	0.0	0:00.84	events/0
6	root	20	0	0	0	0	S	0.0	0.0	0:00.01	khelper
11	root	20	0	0	0	0	S	0.0	0.0	0:00.00	async/mgr
153	root	20	0	0	0	0	S	0.0	0.0	0:00.02	sync_supers
155	root	20	0	0	0	0	S	0.0	0.0	0:00.03	bdi-default
156	root	20	0	0	0	0	S	0.0	0.0	0:00.16	kblockd/0
157	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kacpid
158	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kacpi_notify
159	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kacpi_hotplug
258	root	20	0	0	0	0	S	0.0	0.0	0:00.00	ata_aux
259	root	20	0	0	0	0	S	0.0	0.0	0:00.00	ata_sff/0
264	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khubd
267	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kseriod
370	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khpsbpkt
377	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rpciod/0
397	root	20	0	0	0	0	S	0.0	0.0	0:00.09	kswaped0
398	root	20	0	0	0	0	S	0.0	0.0	0:00.00	aio/0

Information Service Time/UPS Boot/Shutdown Upgrade Log Notification System Tools

Connection netstat ps top df dmesg Get all logs

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/NASVG/NASVG-NASROOT	5160576	512628	4385804	11%	/
/dev/hda2	91347	64554	22077	75%	/DOM
/dev/mapper/NASVG-home	1038336	33076	1005260	4%	/mnt/NAS/home
/dev/mapper/NASVG-TEST	104806400	393264	104413136	1%	/mnt/NAS/TEST
/dev/sdc	153833340	551944	145467056	1%	/mnt/NAS/Attached-Storage/RDX_Recorder
/dev/sdd1	3902056	707044	3195012	19%	/mnt/NAS/Attached-Storage/USB/sdd1

Information Service Time/UPS Boot/Shutdown Upgrade Log Notification System Tools

Connection netstat ps top df dmesg Get all logs

```

io 0xb000-0xbfff]
pci_bus 0000:01: resource 1 [mem 0xfd600000-0xfd6fffff]
pci_bus 0000:01: resource 2 [mem 0xfd900000-0xfd9fffff 64bit pref]
pci_bus 0000:02: resource 0 [io 0xd000-0xdfff]
pci_bus 0000:02: resource 1 [mem 0xfdd00000-0xfddfffff]
pci_bus 0000:02: resource 2 [mem 0xfdc00000-0xfdcfffff 64bit pref]
pci_bus 0000:03: resource 0 [io 0xc000-0xcfff]
pci_bus 0000:03: resource 1 [mem 0xfdb00000-0xfdbfffff]
pci_bus 0000:03: resource 2 [mem 0xfda00000-0xfdafffff 64bit pref]
pci_bus 0000:04: resource 0 [io 0xe000-0xefff]
pci_bus 0000:04: resource 1 [mem 0xfd800000-0xfd8fffff]
pci_bus 0000:04: resource 2 [mem 0xfd700000-0xfd7fffff 64bit pref]
pci_bus 0000:04: resource 4 [io 0x0000-0x0cf7]
pci_bus 0000:04: resource 5 [io 0x0d00-0x0fff]
pci_bus 0000:04: resource 6 [mem 0x000a0000-0x000bffff]
pci_bus 0000:04: resource 7 [mem 0x000c0000-0x000dffff]
pci_bus 0000:04: resource 8 [mem 0x3f800000-0x3febffff]
NET: Registered protocol family 2
IP route cache hash table entries: 32768 (order: 5, 131072 bytes)
TCP established hash table entries: 131072 (order: 8, 1048576 bytes)
TCP bind hash table entries: 65536 (order: 7, 524288 bytes)
TCP: Hash tables configured (established 131072 bind 65536)
TCP reno registered
UDP hash table entries: 512 (order: 2, 16384 bytes)
UDP-Lite hash table entries: 512 (order: 2, 16384 bytes)
NET: Registered protocol family 1
RPC: Registered udp transport module.
RPC: Registered tcp transport module.
  
```

Get all logs

Use this button to save all actiNAS logs to a log file in local directory. The log file will be given *.tar* extension name. Rename the log file if needed.

Information Service Time/UPS Boot/Shutdown Upgrade Log Notification System Tools

Connection netstat ps top df dmesg Get all logs

FTP Connections:

PID	UID	Username	Fullname	Logintime	IP

Telnet Connections:

PID	UID	Username	Fullname	Logintime	IP

AppleTalk Connections:

PID	UID	Username	Fullname

SSH Connections:

PID	UID	Username	Fullname	Logintime	IP

Samba Connections:

Samba version 3.3.13

PID	Username	Group	Machine

NFS (TCP) Active Connections:

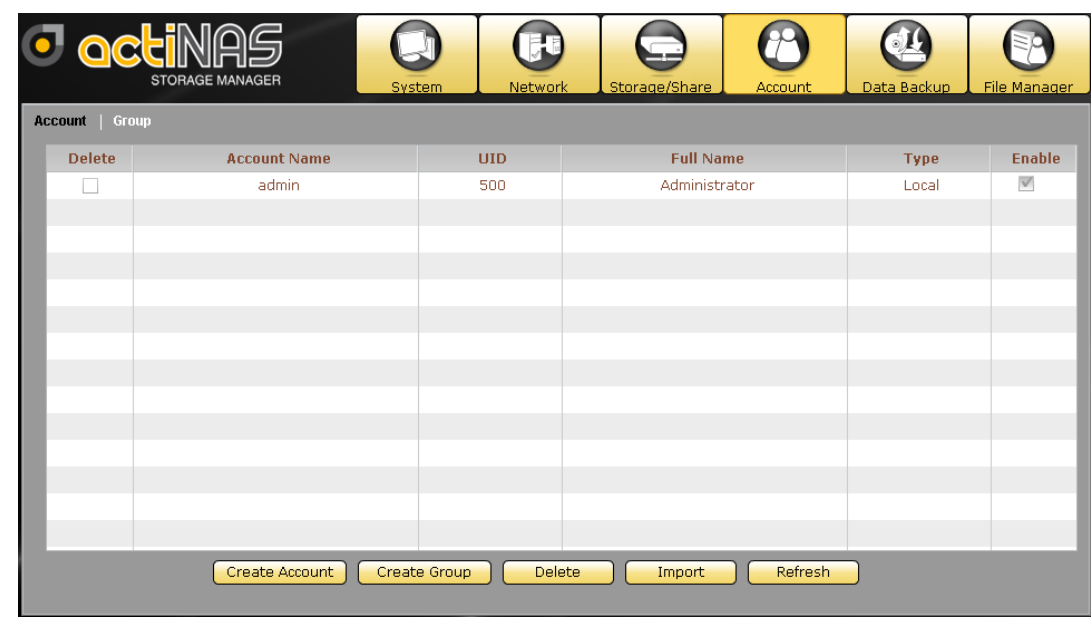
Warning

Confirm to download file?

Yes No

Account

Using the Account function, the administrator can create and administer local user and group accounts, as well as import large number of accounts.



Account

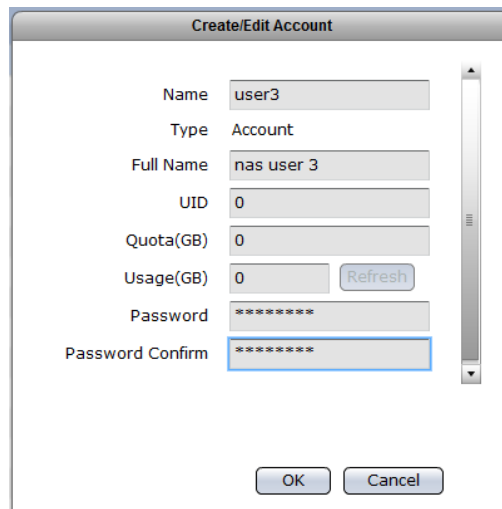
Account Information and Options

Delete	Used to option to delete the selected account. After checking this option, click the <i>Delete</i> button.
Account Name	Shows the user account name
UID	Shows the user account ID number
Full Name	Shows the user account full name
Type	Shows the type of account, which can be local, Windows or NIS
Enable	Use this option to enable or disable an account. When an account is disabled, the account is prohibited to access the NAS.
Create Account	Use this button to create a user account
Create Group	Use this button to create a group account
Delete	Use this button to delete the selected user account or group account
Import	Use this option to import large number of accounts instead of adding an account one by one. The administrator can type multiple user accounts in the Import Account input box.
Refresh	Use this button to update the information displayed in the Account and Group list.

Create Account

Steps to Create Account:

1. Click *Create Account* button.
2. A dialog box will be displayed. Enter the necessary information.



The dialog box titled "Create/Edit Account" contains the following fields and controls:

- Name: user3
- Type: Account
- Full Name: nas user 3
- UID: 0
- Quota(GB): 0
- Usage(GB): 0, with a Refresh button
- Password: *****
- Password Confirm: *****
- OK and Cancel buttons at the bottom.

Create/Edit Account Options

Name	Used this option to enter the user account name. It should be unique
Type	Displays the type. Shows Account for user account
Full Name	Use this option to enter user account full name
UID	Use this option to manually assign a UID for the account. Use a valid UID starting from 500. If this option is not set (UID is 0), the system will automatically assign UID starting from 500. Domain accounts will have UID from 10000 to 30000.
Quota (GB)	Use this option to assign quota to the user account's home folder. Default quota is 0, which means no limit (or will use the total capacity of home folder).
Usage (GB)	Shows the user account's current usage of home folder
Password	Enter the user account's password
Password Confirm	Enter again the user account's password

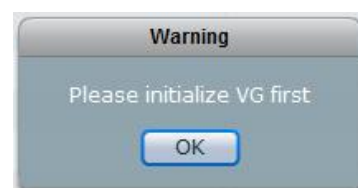


NOTE: The account name does not allow space in-between characters. Duplicate account name is also not allowed. Names used by the system, such as root, nobody, mail, adm, etc., are reserved names and cannot be used as account name.

3. Click *OK* when done. The new user account will added to the Account list.



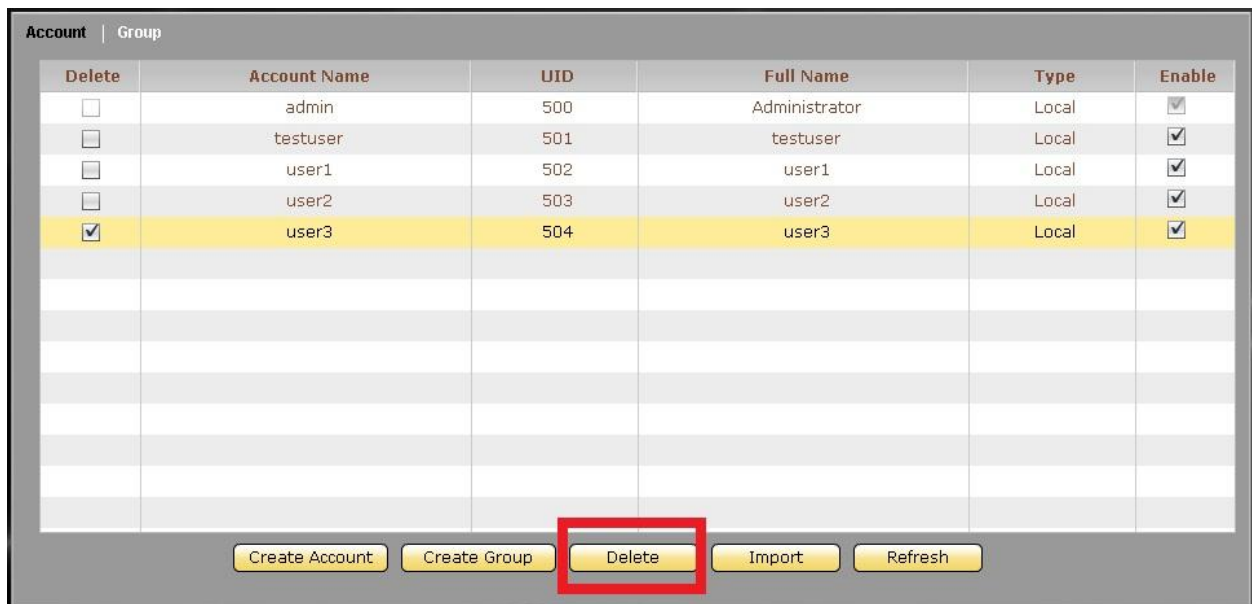
NOTE: If you try to create an Account without an existing VG (NASVG is not yet initialized), a warning message will be displayed.



Delete Account

Steps to Delete Account:

1. In the Account list, check the *Delete* option for the account to be deleted.



2. Click the *Delete* button.

3. A warning message will be displayed. Select Yes to proceed. The account will be deleted.



Edit Account

Steps to Edit Account:

1. Double-click the Account name in the Account List.
2. Edit the necessary options.



NOTE: Only the Full Name, Quota, Password, and Password Confirm can be changed. Account Name, UID, and Usage cannot be changed.

The screenshot shows a 'Create/Edit Account' dialog box. The fields are as follows:

Field	Value
Name	user3
Type	Account
Full Name	nas user 3
UID	503
Quota(GB)	10
Usage(GB)	0
Password	*****
Password Confirm	*****

Buttons: OK, Cancel, Refresh

3. Click *OK* when done. The account will be updated with the changes made.

Import Account

Steps to Import Account:

1. Click *Import* button.
2. An input box will displayed. Type the account information using the following format:
UID,Name,Password,FullName,Quota. Click *OK* when done.

Import Account

```
# example:uid,name,passwd,fullname,quota
610,user10,mypassword10,nas user 10,20
611,user11,mypassword11,nas user 11,20
```

OK

Cancel

3. The new accounts will appear in the Account list.

Account | Group

Delete	Account Name	UID	Full Name	Type	Enable
<input type="checkbox"/>	admin	500	Administrator	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	testuser	501	testuser	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	user1	502	user1	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	user2	503	user2	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	user3	504	user3	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	user10	610	nas user10	Local	<input checked="" type="checkbox"/>
<input type="checkbox"/>	user11	611	nas user 11	Local	<input checked="" type="checkbox"/>

Create Account

Create Group

Delete

Import

Refresh

Group

[illegible]

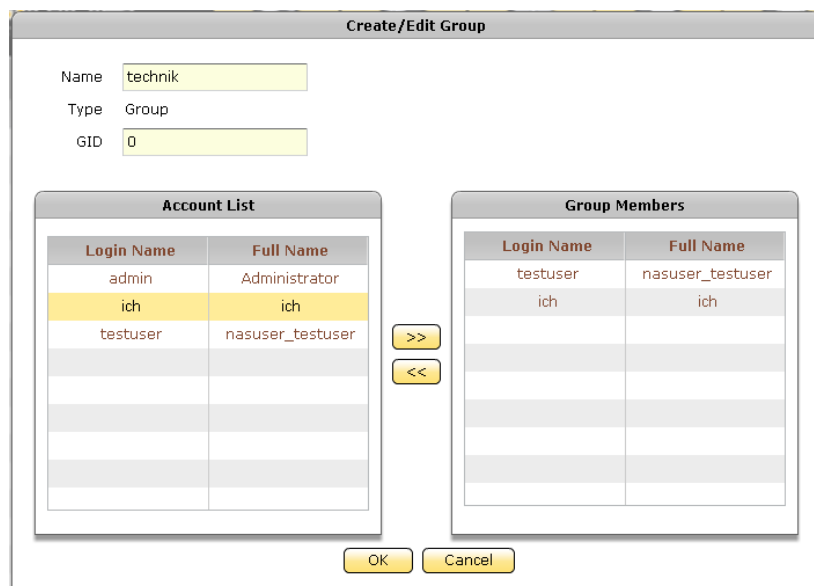
Group Information and Options

Delete	Used to option to delete the selected group. After checking this option, click the <i>Delete</i> button.
Group Name	Shows the group account name
GID	Shows the group ID number
Members	Shows the group's user account members
Create Account	Use this button to create a user account
Create Group	Use this button to create a group account
Delete	Use this button to delete the selected user account or group account
Import	Use this option to import large number of accounts instead of adding an account one by one. The administrator can type multiple user accounts in the Import Account input box.
Refresh	Use this button to update the information displayed in the Account and Group list

Create Group

Steps to Create Group:

1. Click the *Create Group* button.



The 'Create/Edit Group' dialog box contains the following fields and components:

- Name:** A text field containing 'technik'.
- Type:** A dropdown menu set to 'Group'.
- GID:** A text field containing '0'.
- Account List:** A table with two columns: 'Login Name' and 'Full Name'. It lists 'admin' (Administrator), 'ich' (ich), and 'testuser' (nasuser_testuser). The 'ich' row is highlighted.
- Group Members:** A table with two columns: 'Login Name' and 'Full Name'. It lists 'testuser' (nasuser_testuser) and 'ich' (ich).
- Navigation:** '>>' and '<<' buttons between the two tables.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

2. A dialog box will be displayed. Enter the necessary information.

Create/Edit Group Options

Name	Used this option to enter the group account name. It should be unique
Type	Displays the account type; shows Group for group account
GID	Use this option to manually assign a GID for the group. Use a valid GID starting from 500. If this option is not set (GID is 0), the system will automatically assign GID starting from 500.

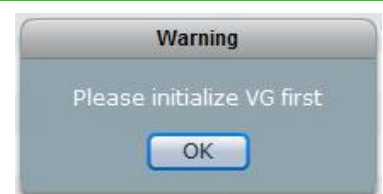


NOTE: The group name does not allow space in-between characters. Duplicate group name is not allowed. Names used by the system, such as root, nobody, mail, adm, etc., are reserved names and cannot be used as account name.

3. Select the account that will become member of the group from the Account List. Then click the >> button. The selected account will be displayed in the Group Members list.
4. Click *OK* when done. The group will be created.



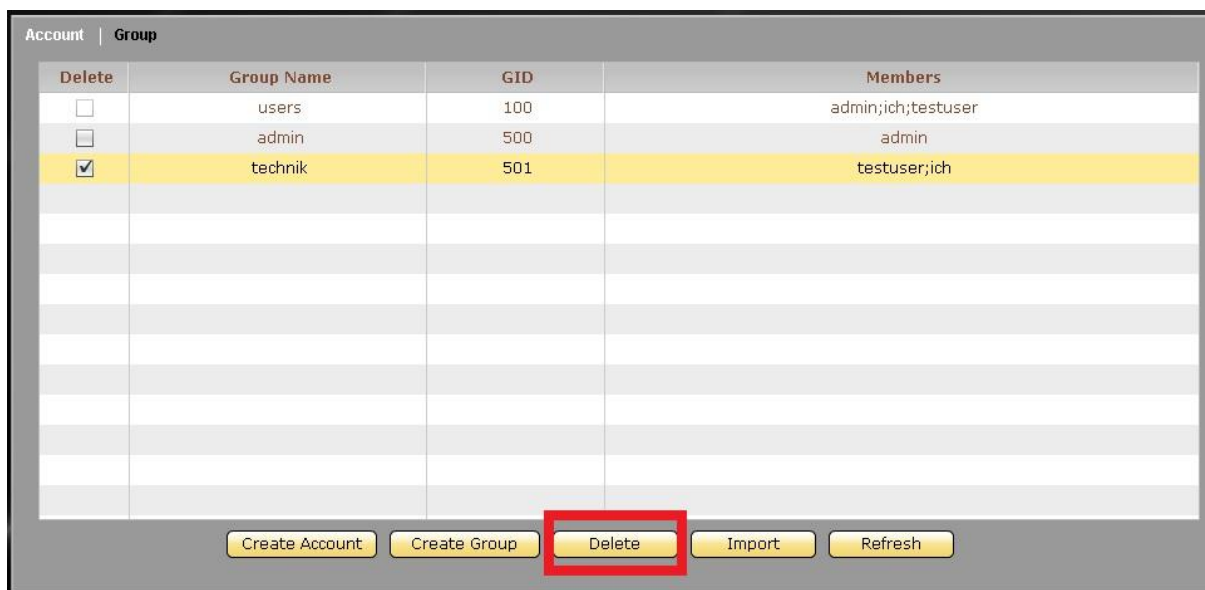
NOTE: If you try to create a Group without an existing VG (NASVG is not yet initialized), a warning message will be displayed.



Delete Group

Steps to Delete Group:

1. In the Group list, check the *Delete* option for the group to be deleted.



2. Click the *Delete* button.
3. A warning message will be displayed. Select Yes to proceed. The group will be deleted.



Edit Group

Steps to Edit Group:

1. Double-click the Group name in the Group List.
2. Edit the necessary options.



NOTE: Only the Group Name and Group Members can be changed.

Create/Edit Group

Name

Type

GID

Account List

Login Name	Full Name
admin	Administrator
ich	ich
testuser	nasuser_testuser

Group Members

Login Name	Full Name
testuser	nasuser_testuser

>>

<<

OK Cancel

3. Click *OK* when done. The group will be updated with the changes made.

File Manager

Introduction to File Manager


File Manager is a web-based file system management utility for admin and ordinary users to do the following actions:

Create, Delete, Rename a Folder	User needs to have read and write permission to the share folder and the folder itself in order to create, delete, or rename the folder.
Set Folder Permission	User needs to have read and write permission to the share folder and the folder itself in order to set the permission of the folder.
Upload a file	User needs to have read and write permission to the share folder/ sub-folder. A browser's upload window will show up and user needs to locate the file from local computer to be uploaded to the current folder.
Download a file	User needs to have at least read permission to the folder and the file itself. After selecting the file to be downloaded and clicking <i>Download</i> , a browser's download window will show up and user can (open or) save the file to local directory.
Rename a file	User needs to have read and write permission to the folder and the file itself. Select the file to be renamed. A pop up window will show up and user needs to enter the new file name.
Delete a file	User needs to have read and write permission to the folder and the file itself. Select the file to be deleted. A pop up message will show up and user needs to select <i>Yes</i> to delete the selected file.

Login to File Manager

Admin Login

Admin can login to File Manager while in actiNAS Manager GUI. Select the File Manager icon on the upper right corner. The File Manager window will be displayed.



The screenshot shows the actiNAS STORAGE MANAGER GUI. At the top, there is a navigation bar with icons for System, Network, Storage/Share, Account, Data Backup, and File Manager. The File Manager icon is highlighted with a red border. Below the navigation bar, there are tabs for Information, Service, Time/UPS, Boot/Shutdown, Upgrade, Log, Notification, and System Tools. The Information tab is selected, displaying system details on the left and a hardware status table on the right.

actiNAS STORAGE MANAGER

System Network Storage/Share Account Data Backup **File Manager**

Information Service Time/UPS Boot/Shutdown Upgrade Log Notification System Tools

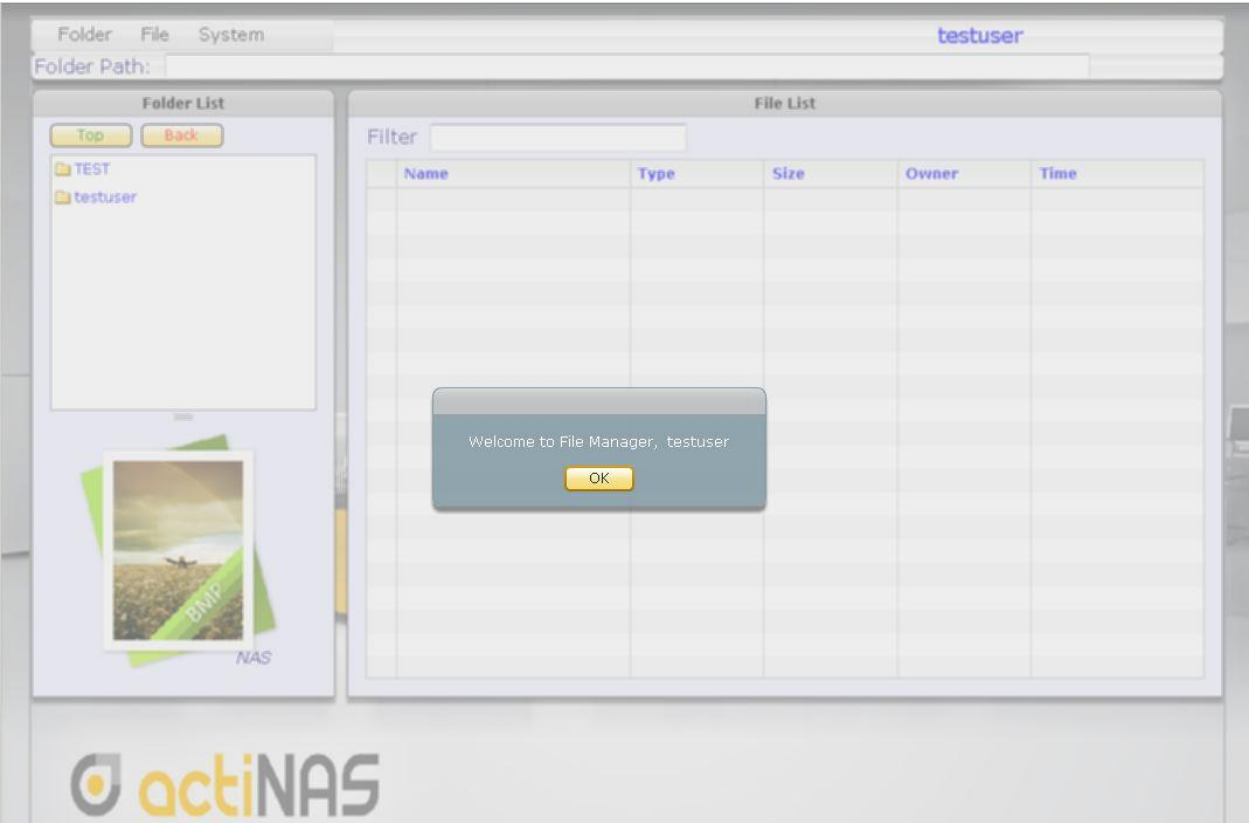
Host Name: oldCube
Domain/WorkGroup: ACTIDATA
Version: 2.0.05
Time: 11/12/2010, Europe/Berlin
Model: actiNAS Cube RDX
CPU: Intel Celeron 430 @ 1.80GHz
Memory(KB): 1025240
Kernel Ver.: 2.6.35.6
Languages: English

Enable Timeout ☒
Enable Internal RDX Backup ☒

Device	Status	
Slot1	33 °C	HDD
Slot2	33 °C	HDD
Slot3	34 °C	HDD
Slot4	33 °C	HDD
Slot5	32 °C	HDD
Fan	1997 RPM	
CPU Fan	1250 RPM	
CPU Temp	+54.0 °C	
M/B Temp	+27.0 °C	

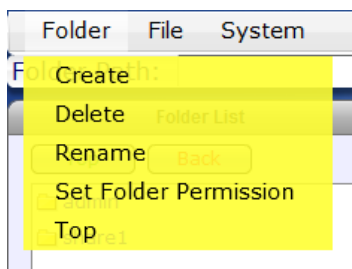
Ordinary User Login

Ordinary user can login to File Manager from main login screen. After login, the File Manager window will be displayed.



Folder

Under Folder menu, user can select the following functions: Create, Delete, Rename, Set Folder Permission, and Refresh Folder List.



Create Folder

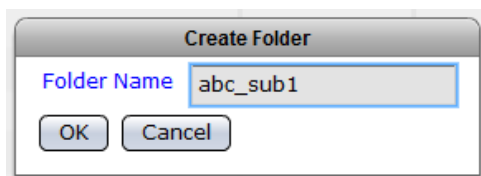


NOTE: User needs to have read and write permission to the share folder/sub-folder in order to create a new sub-folder.

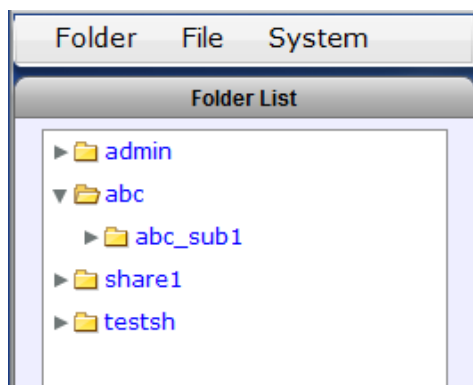
NOTE: Some characters, such as (, #, \$, ^, ", and -, are not allowed to be used as folder name.

To create a folder or sub-folder:

1. Select the share folder or sub-folder where a sub-folder will be created, then select the Folder menu and click Create.
2. Enter the folder name in the Folder Name box. Click OK when done.



3. The folder will be created.



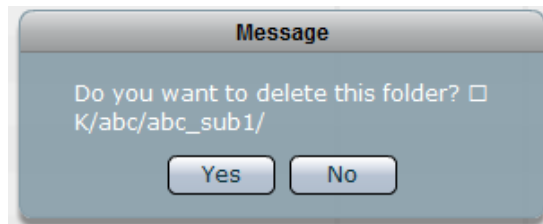
Delete Folder



NOTE: User needs to have read and write permission to the share folder and the sub-folder itself in order to delete the sub-folder.

To delete a folder or sub-folder:

1. Select the folder or sub-folder that will be deleted, then select Folder menu and click Delete.
2. When a message is displayed, click Yes to confirm deletion.



3. The folder will be deleted.

Rename Folder

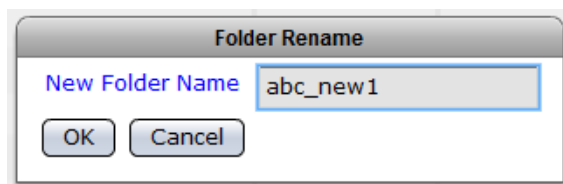


NOTE: User needs to have read and write permission to the share folder and the sub-folder itself in order to rename the sub-folder.

NOTE: Some characters, such as (, #, \$, ^, ", and -, are not allowed to be used as folder name.

To rename a folder or sub-folder:

1. Select the folder or sub-folder, then click Folder menu then select Create.
2. Enter the new folder name in the New Folder Name box. Click OK when done.



3. The folder will be renamed.

Set Folder Permission



NOTE: User needs to have read and write permission to the share folder and the sub-folder itself in order to set the permission on the sub-folder.

NOTE: Admin and user cannot set the permission of the share folder (top level share folder) in File Manager. Admin can do this in actiNAS GUI → Storage/Share → Share/Security. Only sub-folders created under the share folder can be set.

To set the permission on a folder or sub-folder:

1. Select the folder or sub-folder whose permission will be set, then select Folder menu and click Set Folder Permission.
2. The Set folder permission window will be displayed. Modify the permission as needed.

Options

No Access	User or Group is denied access to the folder
Read Only	User or Group is allowed Read-Only access to the folder
Read and Write	User or Group is allowed Read and Write access to the folder

Buttons

Submit	Use this button to save the changes made
Cancel	Use this button to undo any changes made
Apply Permission	Use this button to propagate the current ACL (access control list) from the selected folder into all sub-folders and files under it.

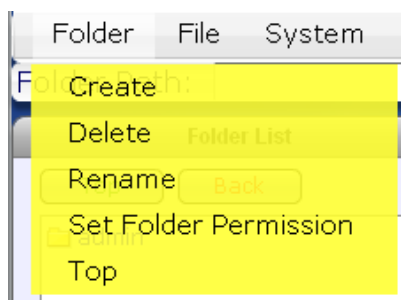
3. Click *Submit* to save the changes. The folder permission is set.



NOTE: If you need to propagate the same permission (ACL) to the sub-folders and files under the current folder, use the *Apply Permission* button.

Top

Use the Top option in the Folder menu to go up to the top most level of share folder list from the current sub-folder.



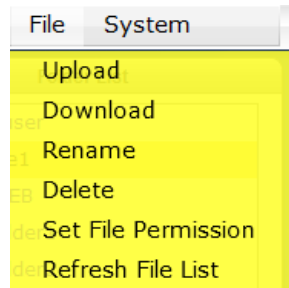
You can also use the Top and Back buttons.



Top	Use this button to go up to the top most level of share folder list from the current sub-folder
Back	Use this button to go up one folder level higher from the current sub-folder

File

Under File menu, user can select the following functions: Upload, Download, Rename, Delete, Set File Permission, and Refresh File List.



Upload File

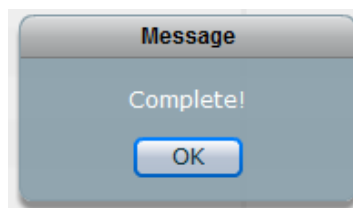


NOTE: User needs to have read and write permission to the share folder and the sub-folder itself in order to upload a file.

NOTE: The file size limit for uploading file via File Manager is 25MB only.

To upload a file:

1. Select a folder or sub-folder where a file will be uploaded, then select File menu and click Upload.
2. A pop up window will be displayed. Select the file that will be uploaded to the folder. Click *Open*.
3. The selected file will be uploaded.
4. A message will be displayed when upload is completed.



Download File



NOTE: User needs to have at least read permission to the share folder/sub-folder and to the file itself in order to download the file.

To download a file:

1. Select a folder or sub-folder where the file to be downloaded is located.
2. Select the file.
3. Select File menu and click *Download*
4. Save (or open) the file.

Rename File

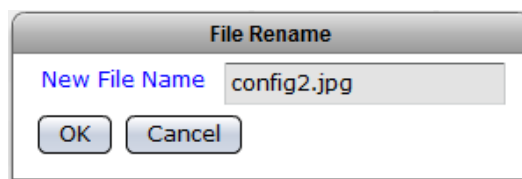


NOTE: User needs to have read and write permission to the share folder/sub-folder and to the file itself in order to rename the file.

NOTE: Some characters, such as (, #, \$, ^, and ", are not allowed to be used as file name.

To rename a file:

1. Select a folder or sub-folder where the file to be renamed is located.
2. Select the file.
3. Select File menu and click *Rename*
4. Enter the new file name
5. Click *OK* when done



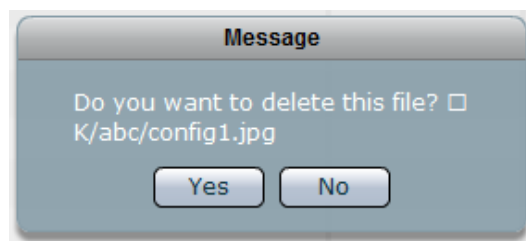
Delete File



NOTE: User needs to have read and write permission to the share folder/sub-folder and to the file itself in order to delete the file.

To delete a file:

1. Select a folder or sub-folder where the file to be deleted is located.
2. Select the file.
3. Select File menu and click *Delete*
4. A message will be displayed
5. Select Yes to delete the file



Set File Permission



NOTE: User needs to have read and write permission to the share folder/sub-folder and to the file itself in order to set file permission.

To set file permission:


















1. Select a folder or sub-folder where the file is located
2. Select the file
3. Select File menu and click *Set File Permission*
4. The Set File Permission window will be displayed
5. Modify the permission as needed
6. Click *Submit* when done
7. A Complete message will be displayed. Click *OK*

User and Group	Status
group:users	<input type="radio"/> No Access <input type="radio"/> Ready only <input checked="" type="radio"/> Ready and Write
admin	<input type="radio"/> No Access <input type="radio"/> Ready only <input checked="" type="radio"/> Ready and Write
testuser	<input type="radio"/> No Access <input type="radio"/> Ready only <input checked="" type="radio"/> Ready and Write
tsai	<input type="radio"/> No Access <input type="radio"/> Ready only <input checked="" type="radio"/> Ready and Write

Warning: cannot modify permission for admin!





Refresh File List

Use the Refresh File List option to update the list of files displayed in the File List on the right pane.

File List					
Filter <input type="text"/>					
	Name	Type	Size	Owner	Time
	Wall.JPG	JPEG Image	103 KB	ACTIDATA\role	Oct 19 14:05:30
	Garden.JPG	JPEG Image	50 KB	ACTIDATA\role	Oct 28 13:51:22
	Terrace.JPG	JPEG Image	43 KB	ACTIDATA\role	Oct 29 16:19:25
	Home.JPG	JPEG Image	113 KB	ACTIDATA\role	Aug 16 11:04:31
	Home1.JPG	JPEG Image	50 KB	ACTIDATA\role	Aug 16 11:05:16
	Home2.JPG	JPEG Image	95 KB	ACTIDATA\role	Aug 16 11:06:31
	Home3.JPG	JPEG Image	76 KB	ACTIDATA\role	Aug 16 11:07:51
	Flower1.JPG	JPEG Image	73 KB	ACTIDATA\role	Oct 28 15:58:51
	Flower2.JPG	JPEG Image	13 KB	ACTIDATA\role	Oct 29 13:17:55
	Flower3.JPG	JPEG Image	105 KB	ACTIDATA\role	Nov 08 12:39:53
	Flower4.JPG	JPEG Image	59 KB	ACTIDATA\role	Oct 19 13:12:01
	Door.JPG	JPEG Image	57 KB	ACTIDATA\role	Nov 05 15:25:25
	Windows.JPG	JPEG Image	48 KB	ACTIDATA\role	Oct 28 08:42:41
	Trees.JPG	JPEG Image	208 KB	ACTIDATA\role	Aug 13 17:32:51
	Forest.JPG	JPEG Image	69 KB	ACTIDATA\role	Oct 19 13:12:36
	Dog.JPG	JPEG Image	163 KB	ACTIDATA\role	Nov 02 15:59:38
	actiLib8U.jpg	JPEG Image	283 KB	ACTIDATA\role	Nov 12 09:59:02

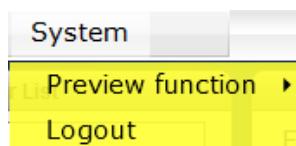


NOTE: Use the Filter function to display specific files. For example, if you want to display files with characters *volume*, enter the word *volume* in the Filter text box. The list of files containing the word *volume* will be displayed. Note that the text is not case-sensitive.

File List					
Filter <input type="text" value="home"/>					
	Name	Type	Size	Owner	Time
	Home.JPG	JPEG Image	113 KB	ACTIDATA\role	Aug 16 11:04:31
	Home1.JPG	JPEG Image	50 KB	ACTIDATA\role	Aug 16 11:05:16
	Home2.JPG	JPEG Image	95 KB	ACTIDATA\role	Aug 16 11:06:31
	Home3.JPG	JPEG Image	76 KB	ACTIDATA\role	Aug 16 11:07:51

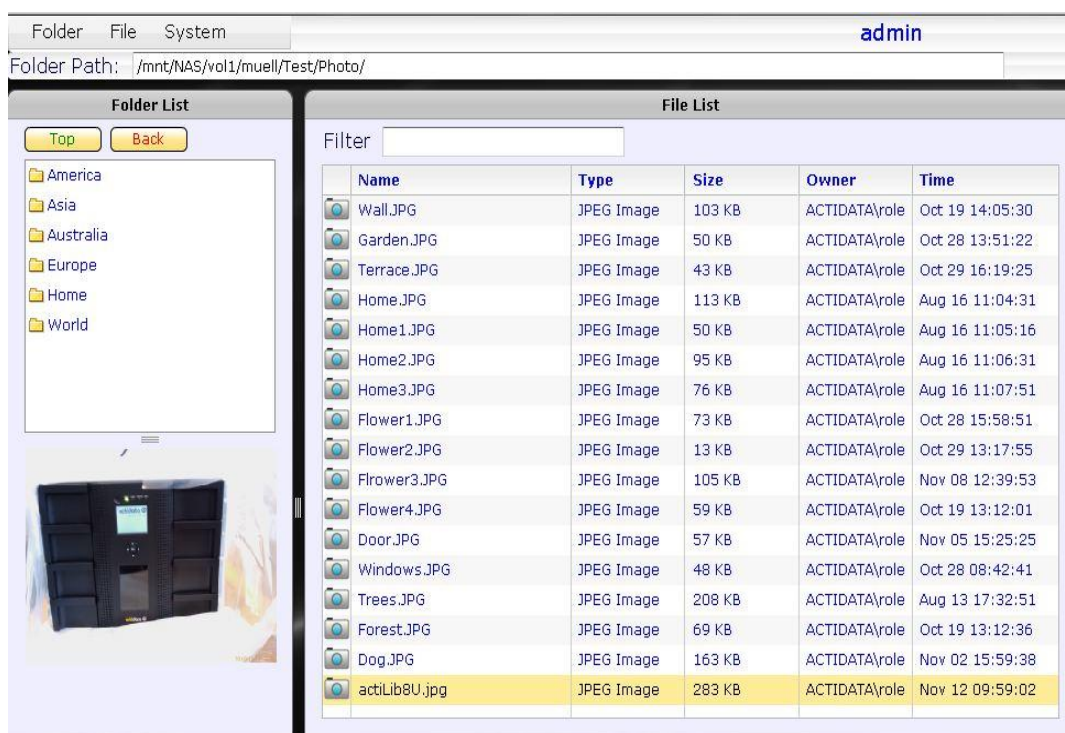
System

Under System menu, user can select the following functions: Preview function and Logout.

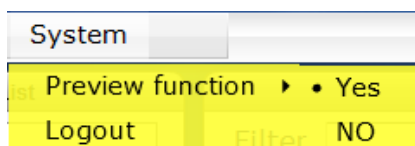


Preview Function

The Preview function enables the user to see a sample view of a picture file on the left lower pane. The supported file format is JPEG Image (.JPG).



By default, the Preview function is enabled (set to Yes). To disable the Preview function, select System Menu and Preview function, and click NO.



Logout

Use the Logout function to logout from File Manager.

To logout:

1. Select System menu and click *Logout*
2. A message will be displayed. Click *Yes* to confirm logout.

